

# Land Development and Access Management



Photos courtesy of Phil Demosthenes

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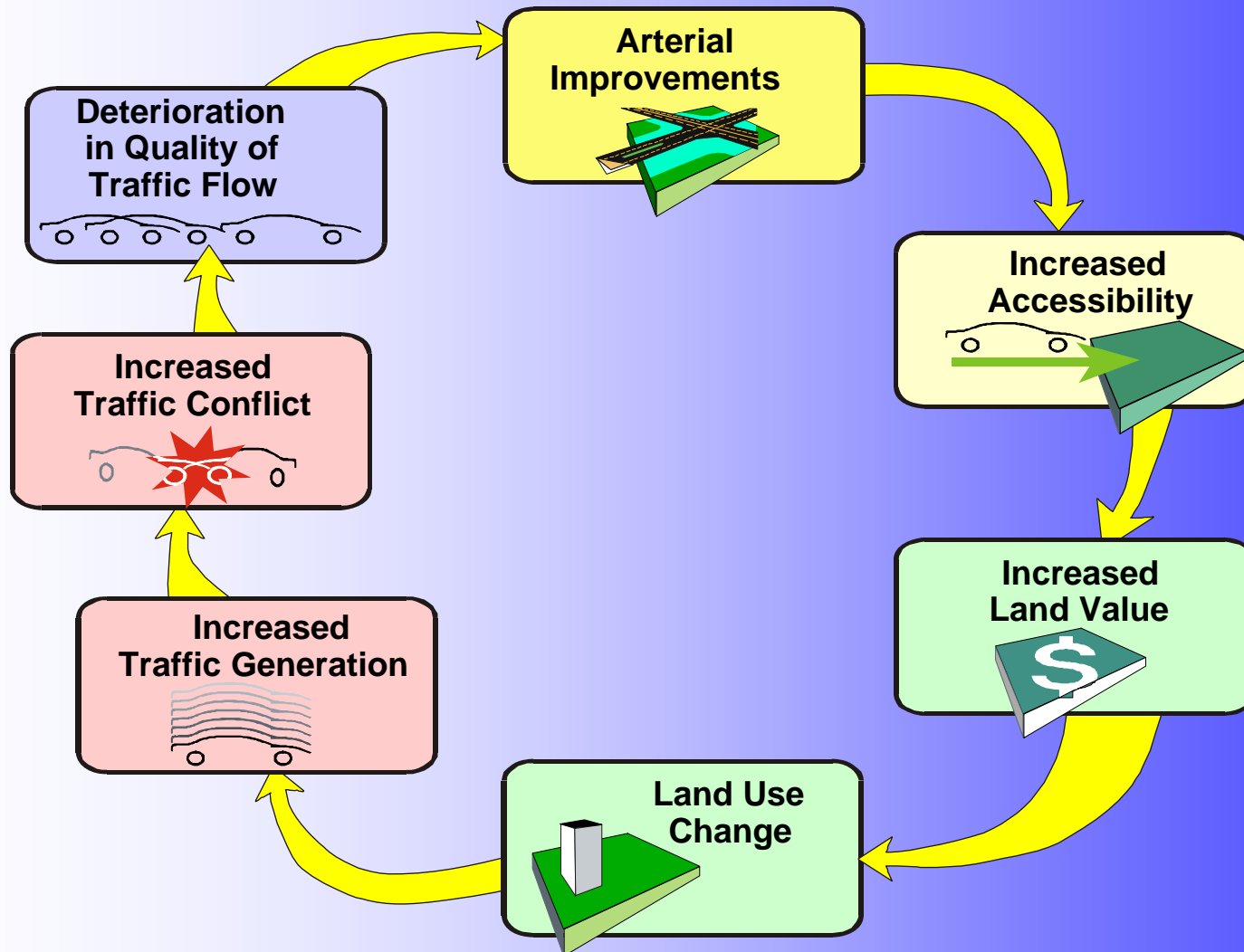
Center for Urban  
Transportation Research

# Workshop Overview

- Introductions
- Access management in planning
- Land development and subdivision regulations
- Street networks and service roads
- Right-of-way and legal considerations



# Transportation & Land Use Cycle

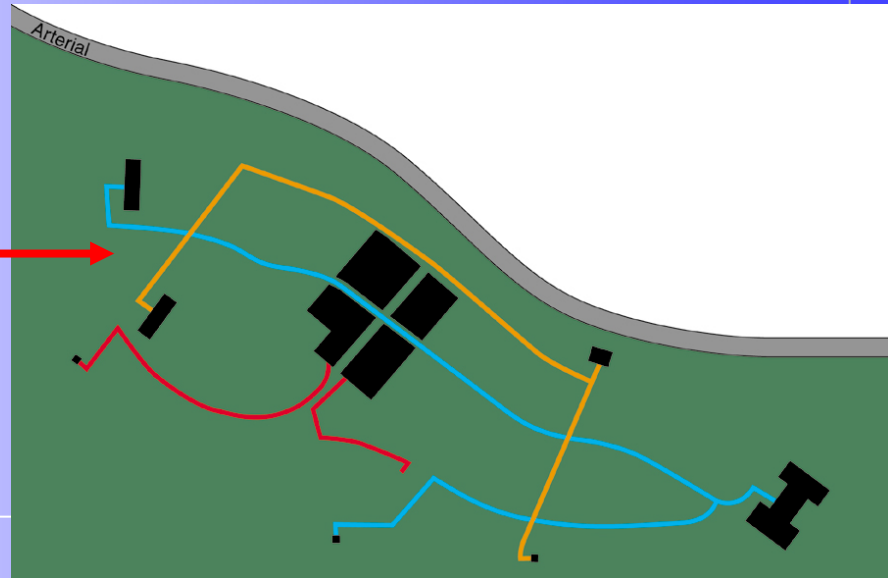
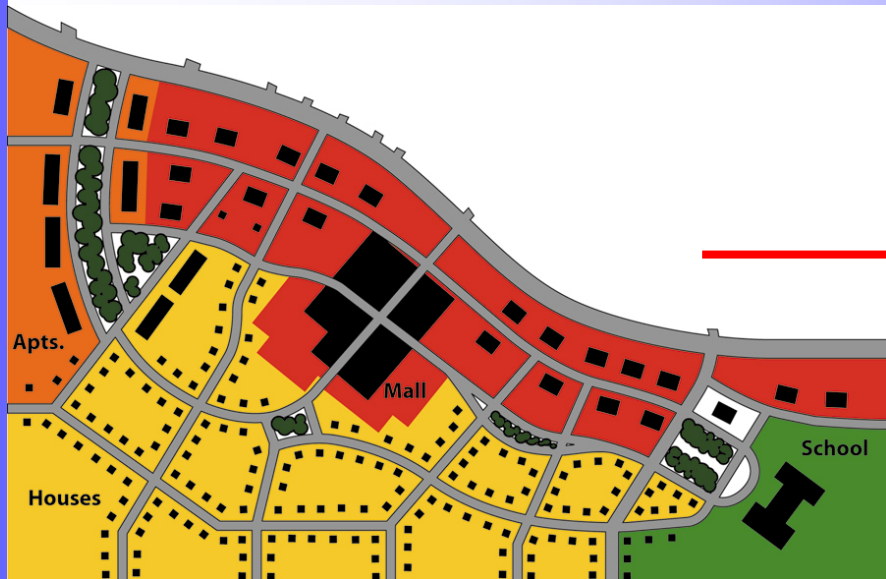
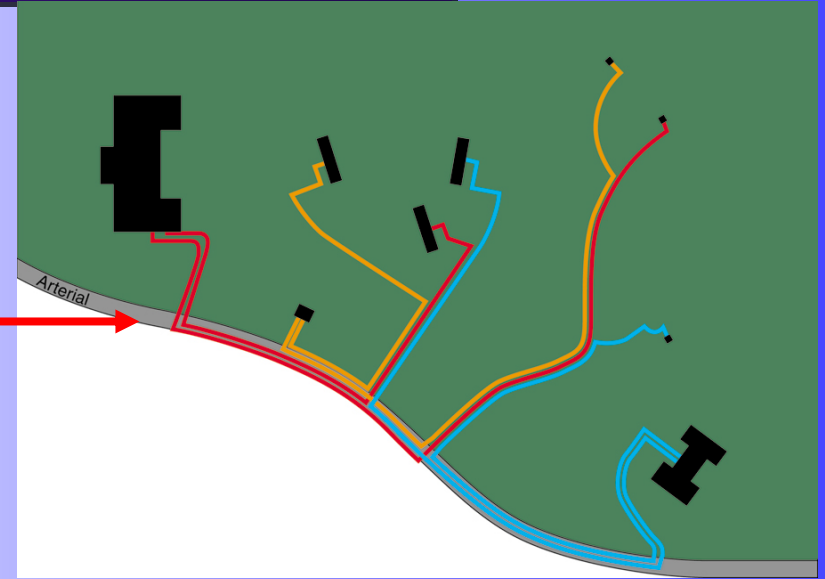
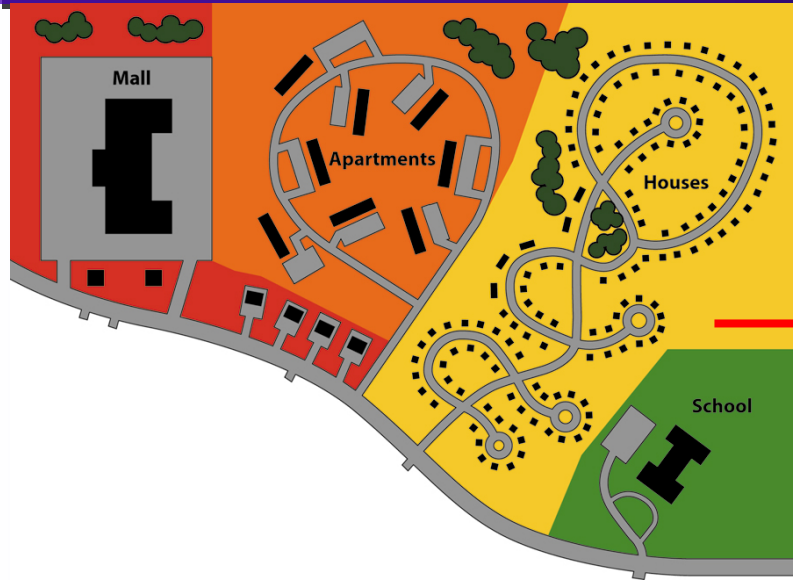


# Typical Corridor Problems



- Frequent and poorly designed driveways
- Closely spaced signals and median openings
- Inadequate street networks
- Lack of connections between adjacent land uses
- Crashes, congestion, & poor aesthetics

# Connectivity and Congestion



# Corridor Access Management Goals

- Strengthen access control on major roadways
- Provide parallel roadways and side street networks
- Achieve unified site circulation and cross access
- Improve state/local coordination in planning and permitting





# Types of Alternative Access

- Unified on-site circulation
- Shared driveways
- Side street access
- Internal connections between adjacent developments
- Local and collector street networks
- Service roads



# Benefits of Access Management

- Safety
  - Reduce crashes up to 50%
- Mobility
  - Increase roadway capacity 23% to 45%
  - Reduce travel time and delay 40% to 60%
- Economic
  - Increased market area for businesses
  - Improved customer safety and convenience
- Aesthetic
  - More area for landscaping
  - Preservation of scenic character



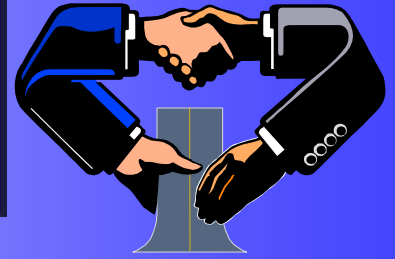


# Benefits of Network Connectivity

- Reduces need for direct arterial access
- Removes short, local trips from arterials
- Increases sites having signalized access on major, high volume roadways
- More sensitive layout of streets and lots
- Increases convenience of alternative modes
- Improves accessibility of neighborhoods to commercial goods and services



# How can local governments institute access management?

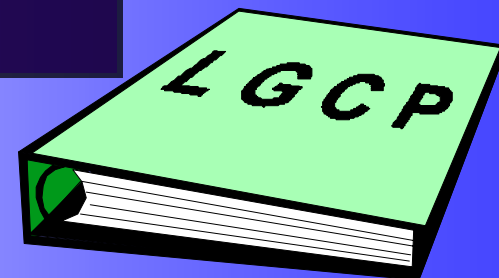


- Comprehensive plans
  - Transportation plans and improvement programs
  - Corridor management plans
  - Subarea plans
- Land development and subdivision regulations
  - Roadway design
  - Site plan review
  - Traffic impact assessment and developer mitigation
- Internal & intergovernmental coordination



# Comprehensive Plans & Policies

# Local Comprehensive Plans



- Establish goals, objectives, and policies for access management
- Classify roadways according to function and access level
  - Designate corridors for special treatment

See Sample Plan Policies in TRB Access Management Manual

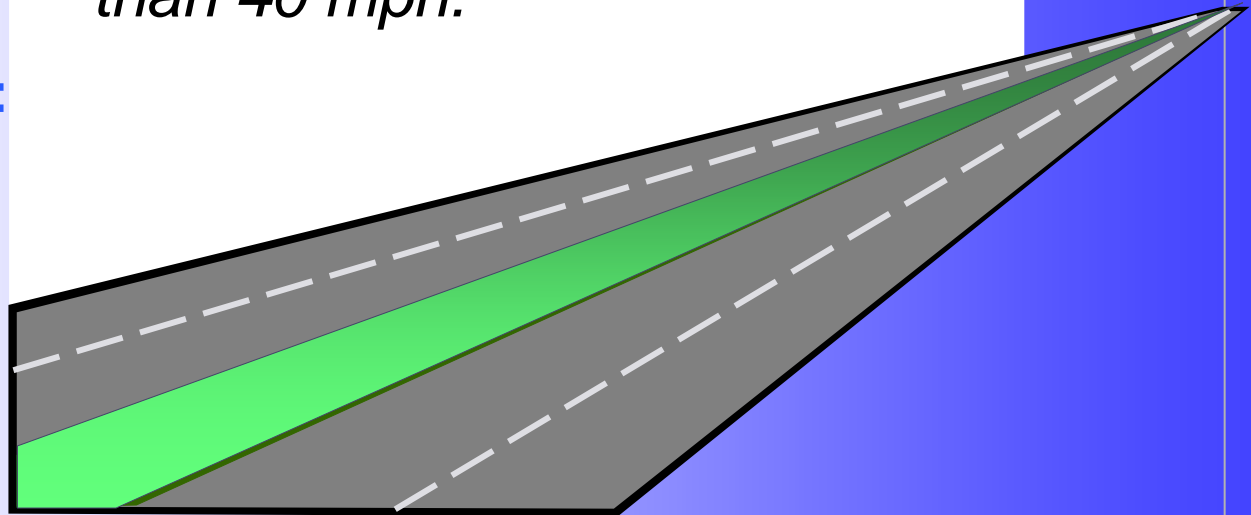


# FDOT Median Policy (1993)

*All multilane facilities shall be designed with a raised or restrictive median except multi-lane sections with design speeds of less than 40 mph.*

## **If less than 40 MPH:**

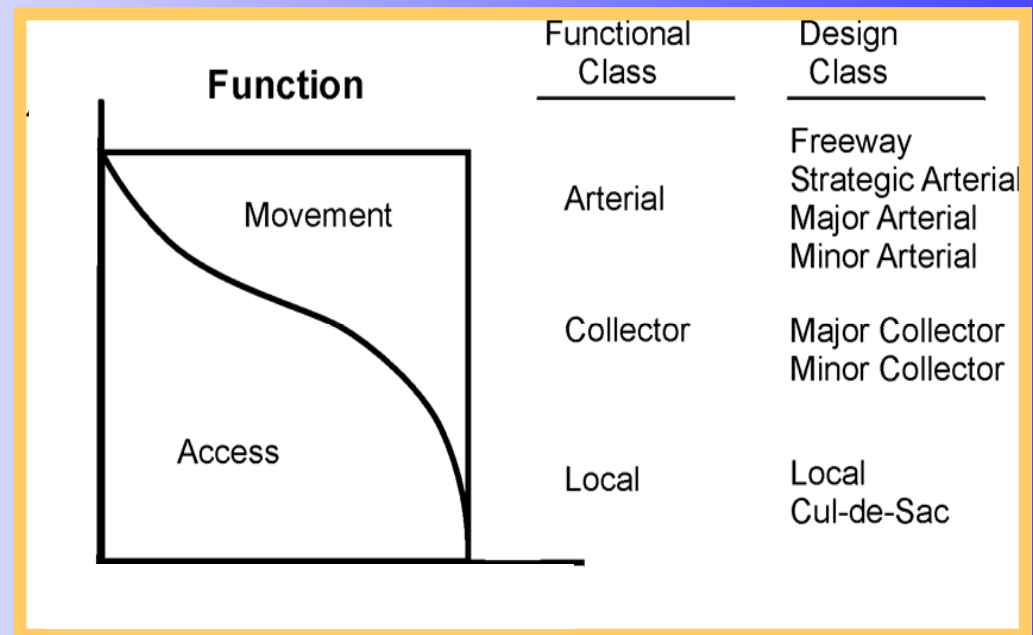
Include sections of raised or restrictive median for enhancing vehicular and pedestrian safety.



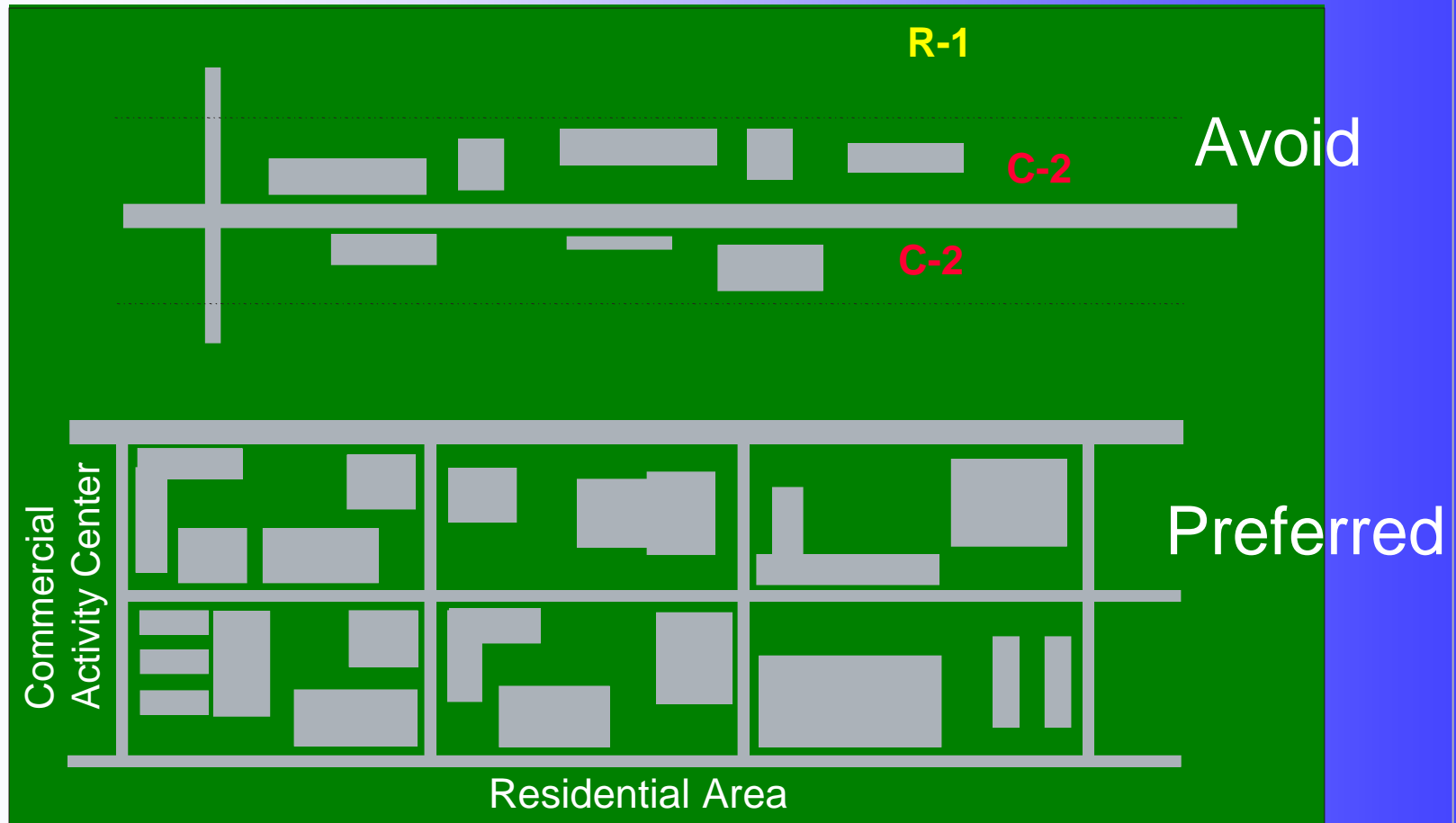
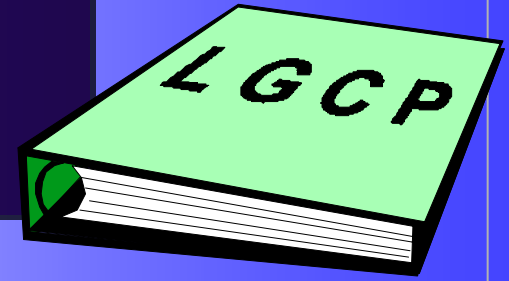
# Roadway Function and Access

## Provide a Specialized Roadway System

- Roads should be designed and managed according to the functions they are expected to serve.

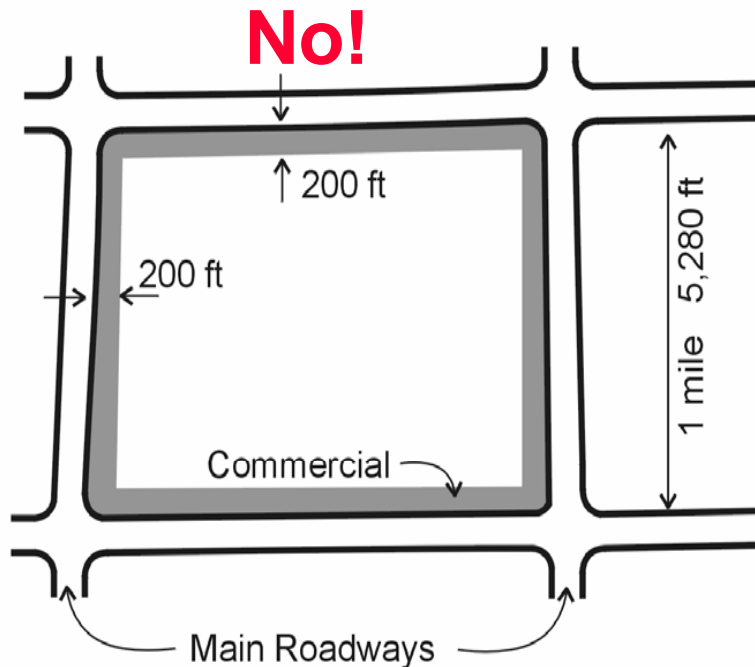


# Promote Activity Centers NOT Strips

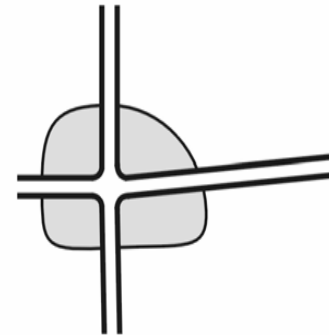




# Activity Centers vs. Strips

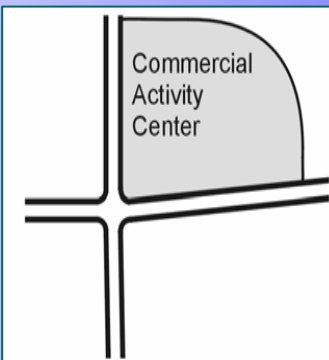


- Frequent, closely spaced access drives
- More area for commercial use than can reasonably be supported
- Results in vacancies, sprawl, low property values, and blighted areas



- Limited frontage on each street
- Inadequate depth for circulation
- Limited flexibility in site design
- Numerous access drives in close proximity

**Avoid**



- More highway frontage
- More depth of circulation system
- More flexibility in site design
- Fewer access problems at intersection

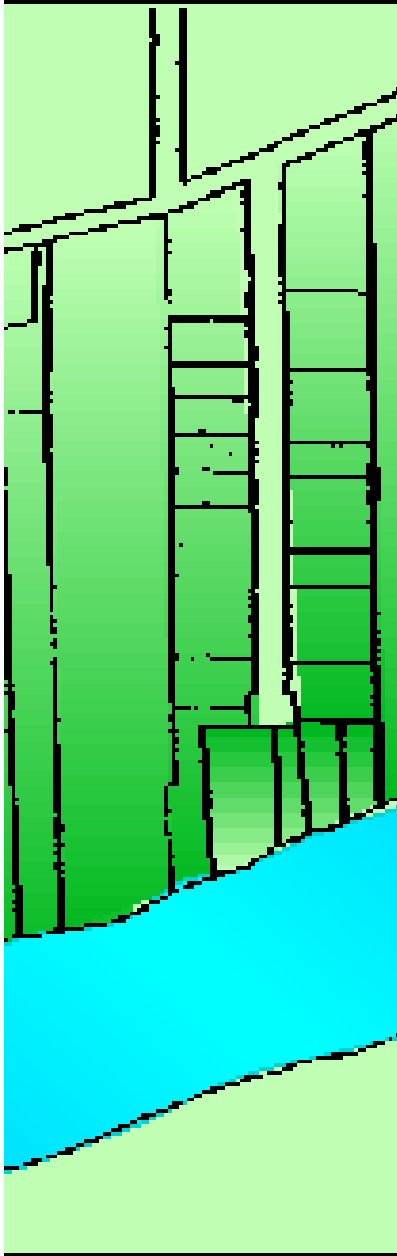
**Preferred**

# Scenic Corridors



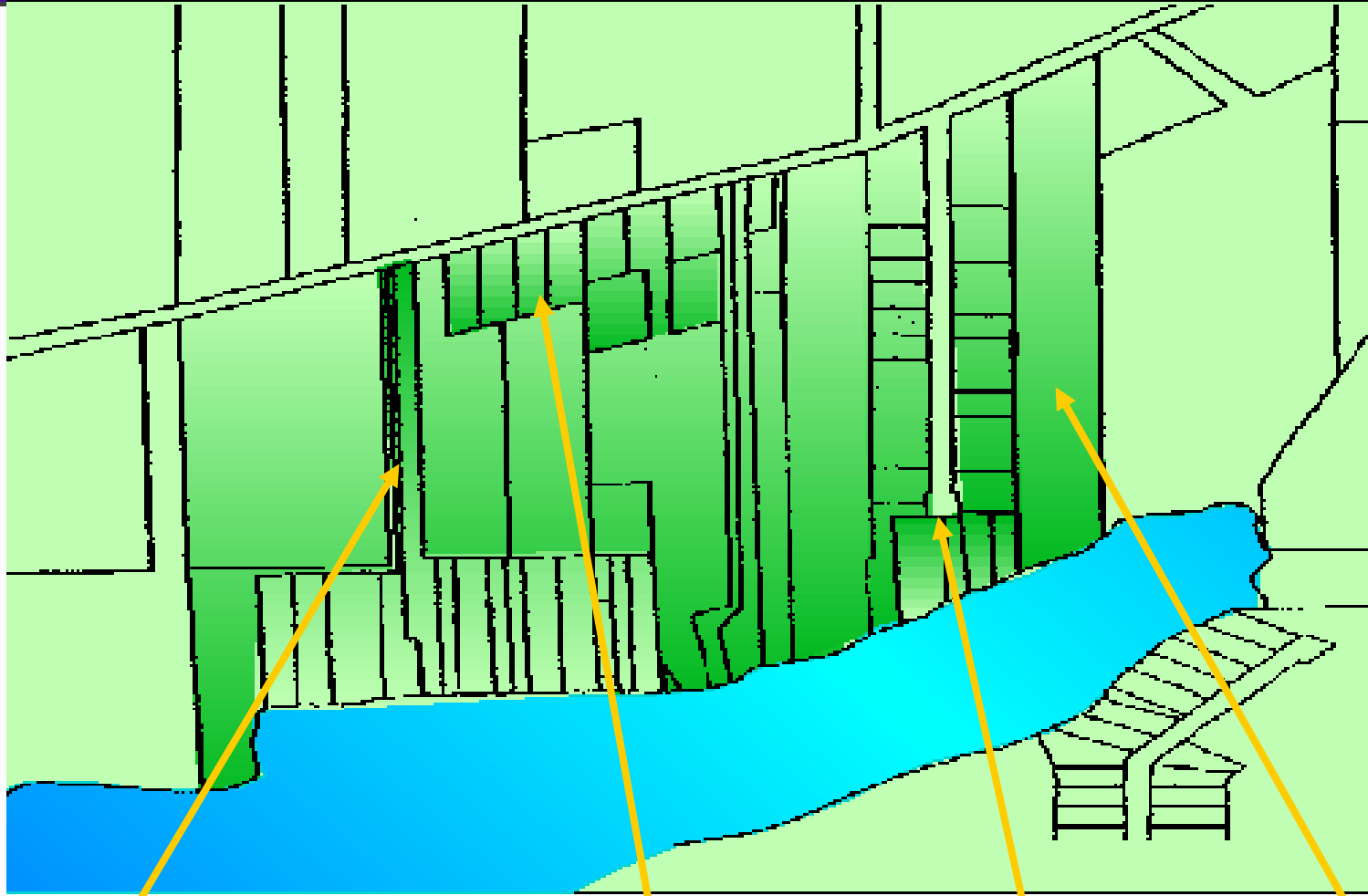
- Access management can help preserve scenic character

Source: R. Arendt, et. al, *Dealing with Change in the Connecticut River Valley*



# Land Division and Subdivision Regulations

# Land Division and Access Problems



Flag Lots    Strip Development    Cul-de-sac    Bowling alley lot

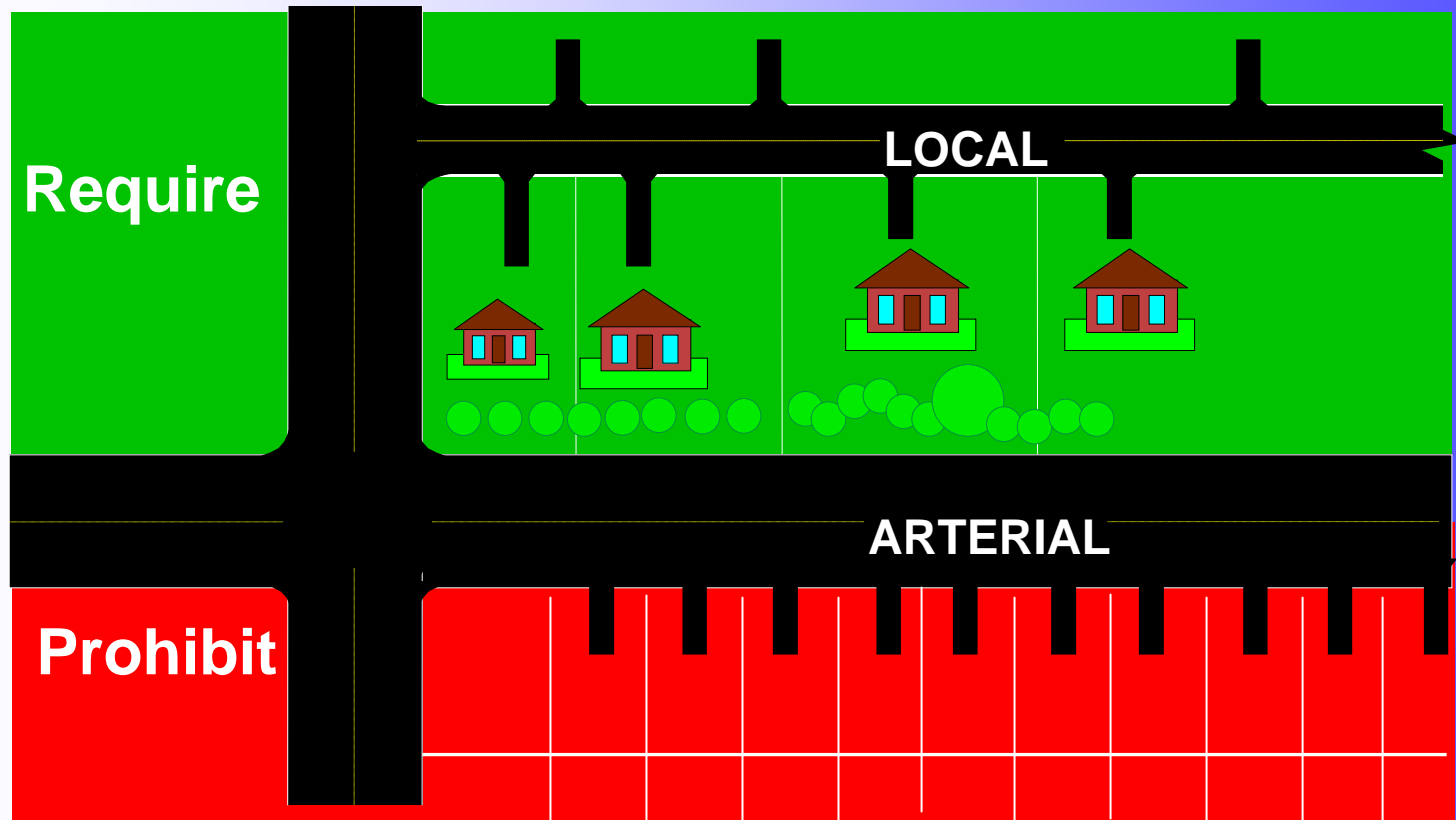
# Improved Subdivision Regulations

- Proper street layout and connections in relation to existing or planned roadways
- Homes obtain access on local streets
- Side street access to corner lots
- Pedestrian path systems and sidewalks
- Lot split regulations to discourage strip lots with no alternative access



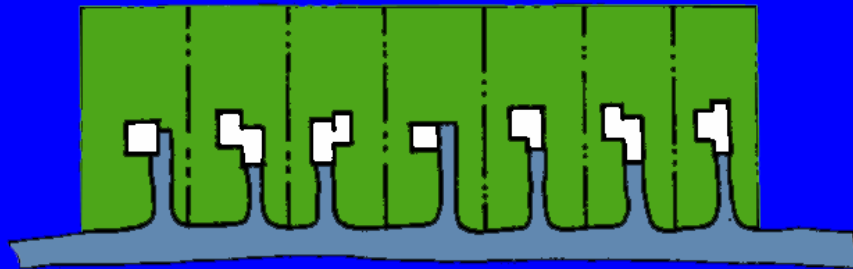
# Residential Subdivisions

- Require reverse frontage
- Primary access should be to local streets



# Shared Residential Access

**Avoid**



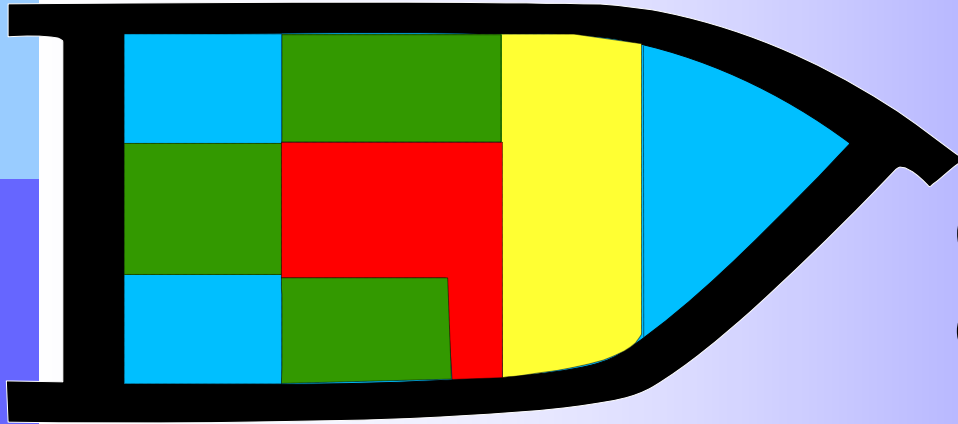
- Require internal roads to small subdivisions
- Reduces curb cuts and improves site design

**Require**

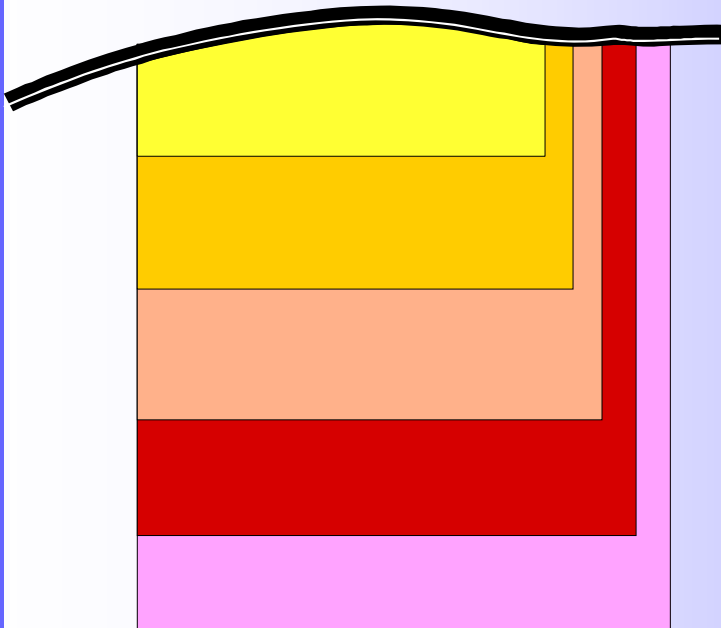




# Flag Lots

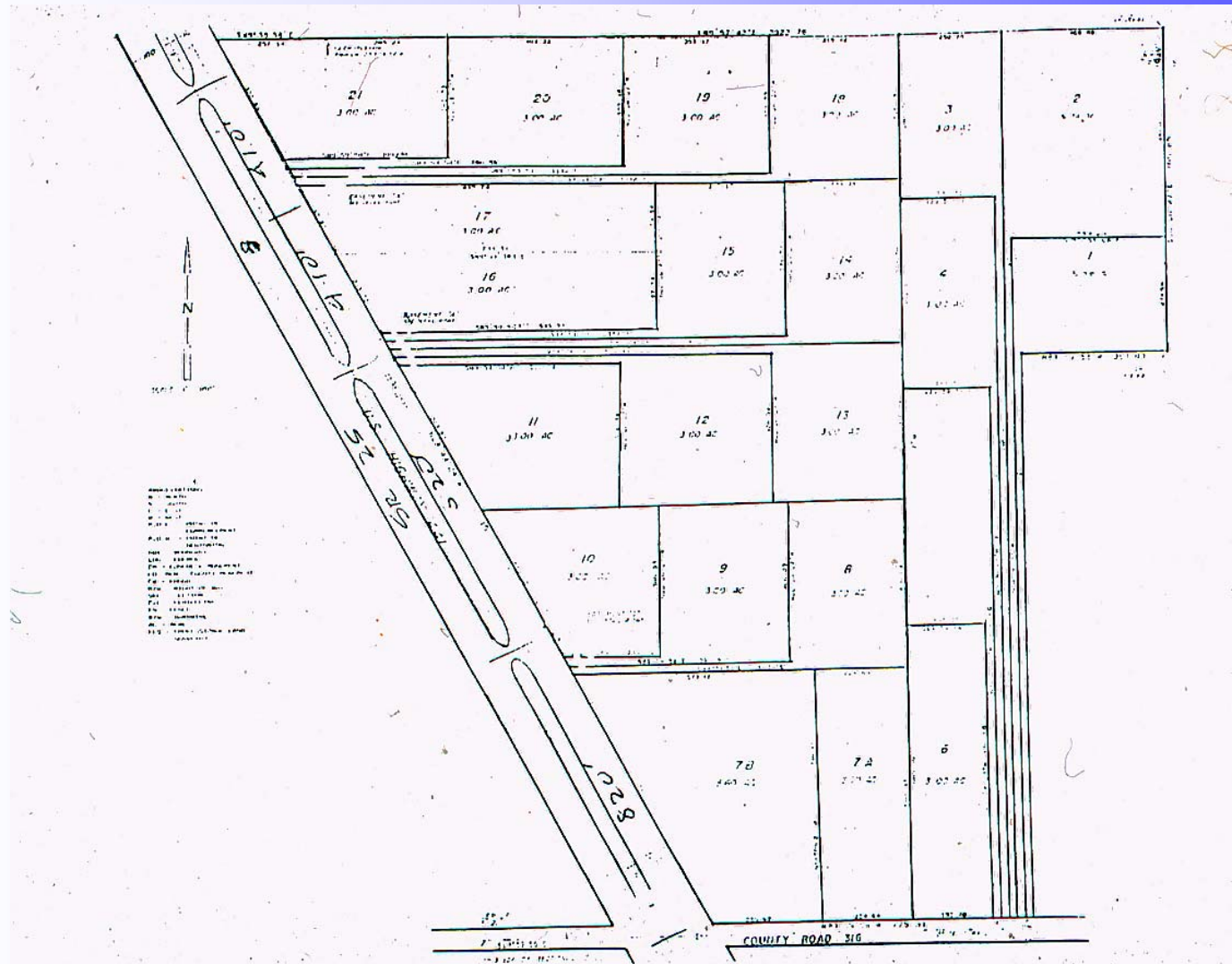


Can be useful in certain circumstances



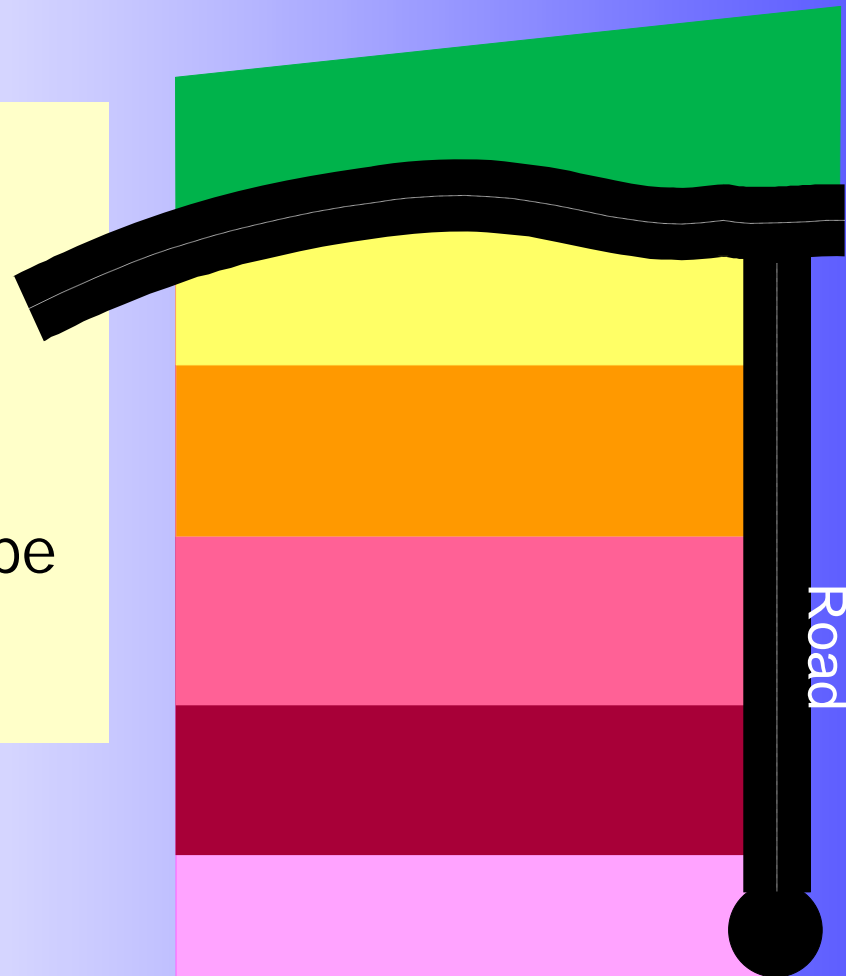
Often abused to avoid the expense of platting and providing a road

# Flag Lots on State Highway

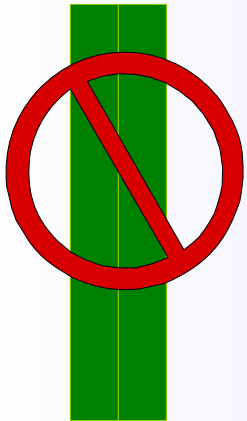


# Flag Lots

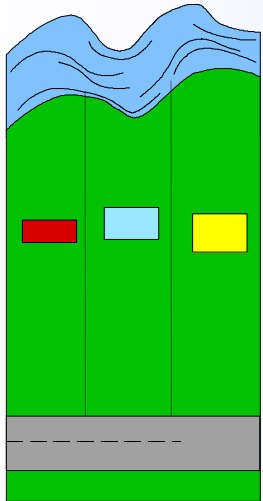
- Prohibit on thoroughfares
- Require a road
- Establish conditions where flag lots may be permitted



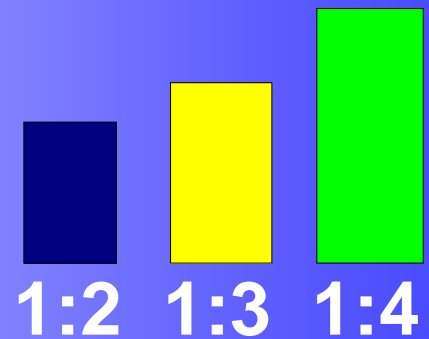
# Lot Width-to-Depth Ratios



Prevent creation of bowling alley lots or irregularly shaped parcels



Provide for greater depth in coastal areas or thoroughfares designated for widening





# Land Development Regulations

# Driveway Spacing Standards



- Adopt minimum spacing standards and permit requirement for driveways
- Reinforce with land development regulations

# Washington County, Oregon

Roadway Category	Driveway Spacing	Corner Clearance <sup>1</sup>
Major arterial	1000 ft.	1000 ft.
Minor arterial	600 ft.	600 ft.
Major collector	100 ft.	100 ft.
Minor collector	-	50 ft.
Local	-	10 ft.

1. or beyond the influence of standing queues.





# Administrative Considerations

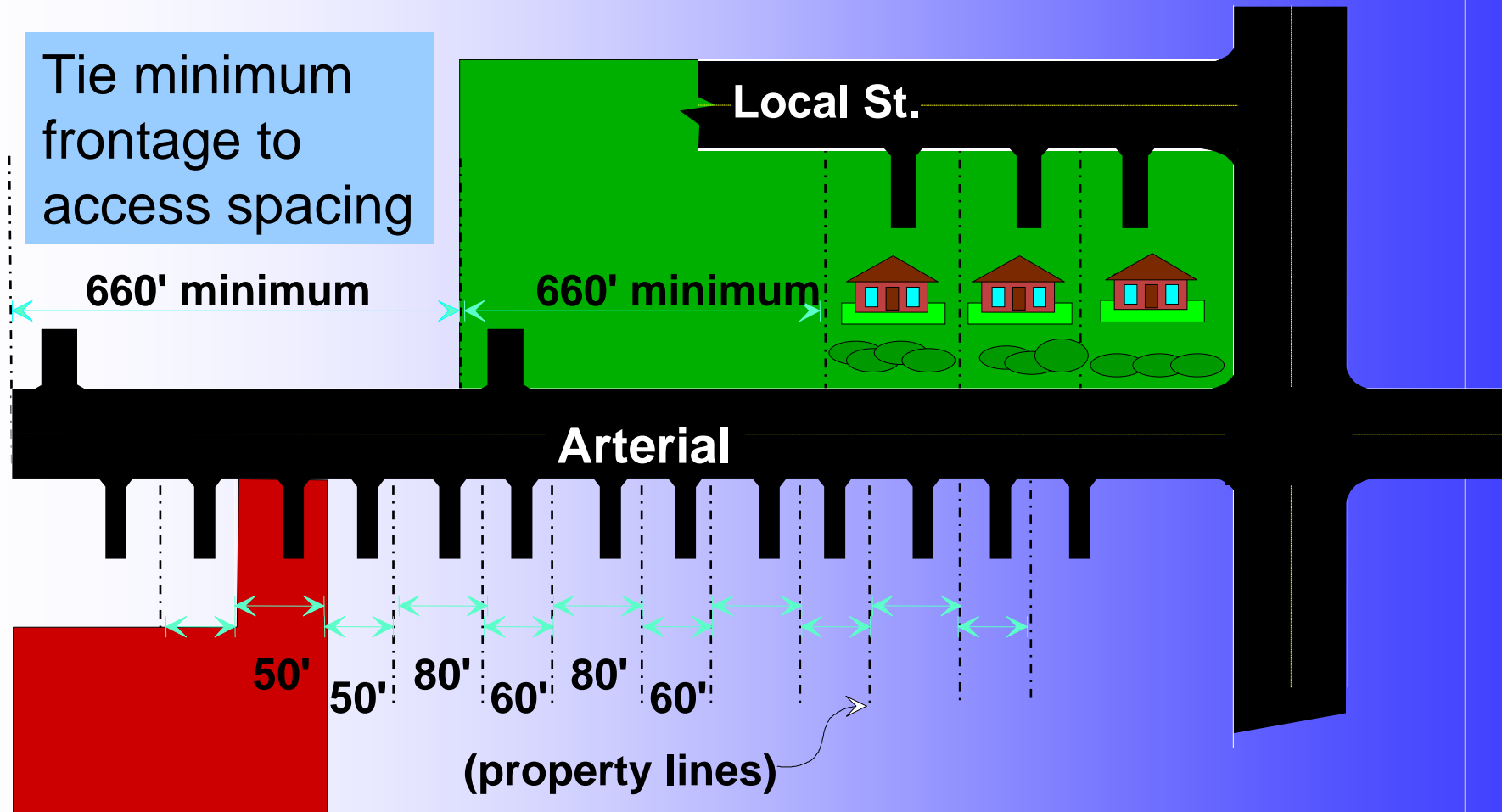
- Establish clear sequence of actions for handling nonconforming situations
- Allow some variation from spacing standards at an administrative level
  - Distinguish between major and minor deviations from spacing standards
  - More rigorous review for major deviations

# Improving access during redevelopment

- Access to nonconforming properties may be improved
  - When new driveway permits are requested
  - Substantial enlargements or improvements
  - Significant change in trip generation
  - As changes to roadway design allow

# Minimum Lot Frontage

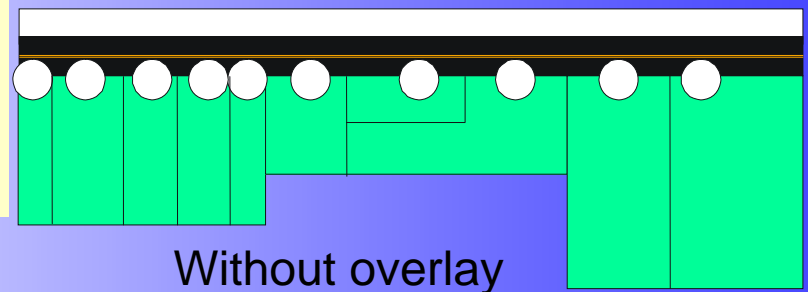
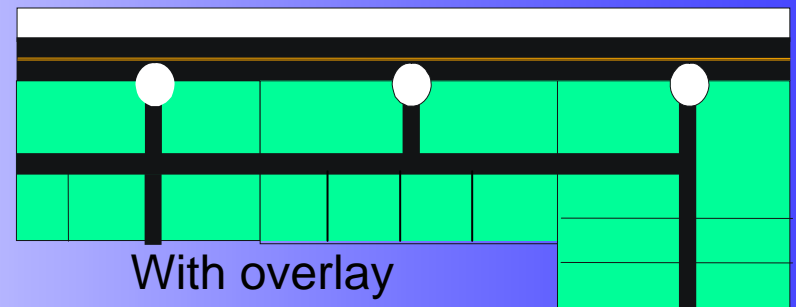
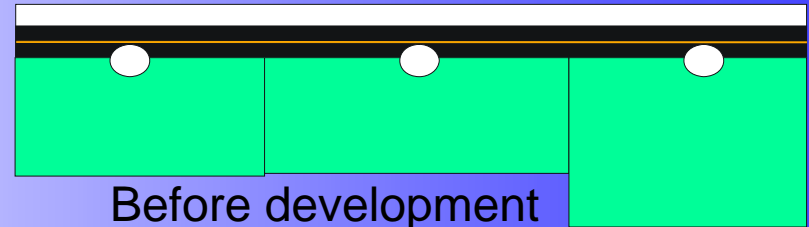
## Levy County, FL US 19 Overlay



Avoid small lot frontages with no alternative access

# Access Management Overlay – Alpine Township, MI

- Verify lot and parcel boundaries
- Permit one access point per lot or parcel
- Conditions for more access connections
- No new connections for future lots



# Corner Clearance Standards



- Often same as spacing standard
- Options for nonconforming situations
  - Joint or cross access with abutting property
  - Access at edge of property
  - Conditional use limitations for small corner properties

# Lack of Interconnection





# Cross Access by Default





# No Side Street Access



Lack of side street access to this business on a major road reduces accessibility from the neighborhood

# Two Adjacent Shopping Centers



Traffic between these two shopping centers is forced onto congested highway, due to lack of interparcel circulation.



# Shared Access and Signage



# Cross Access Connection





# Joint Driveway



# Shared Service Drive

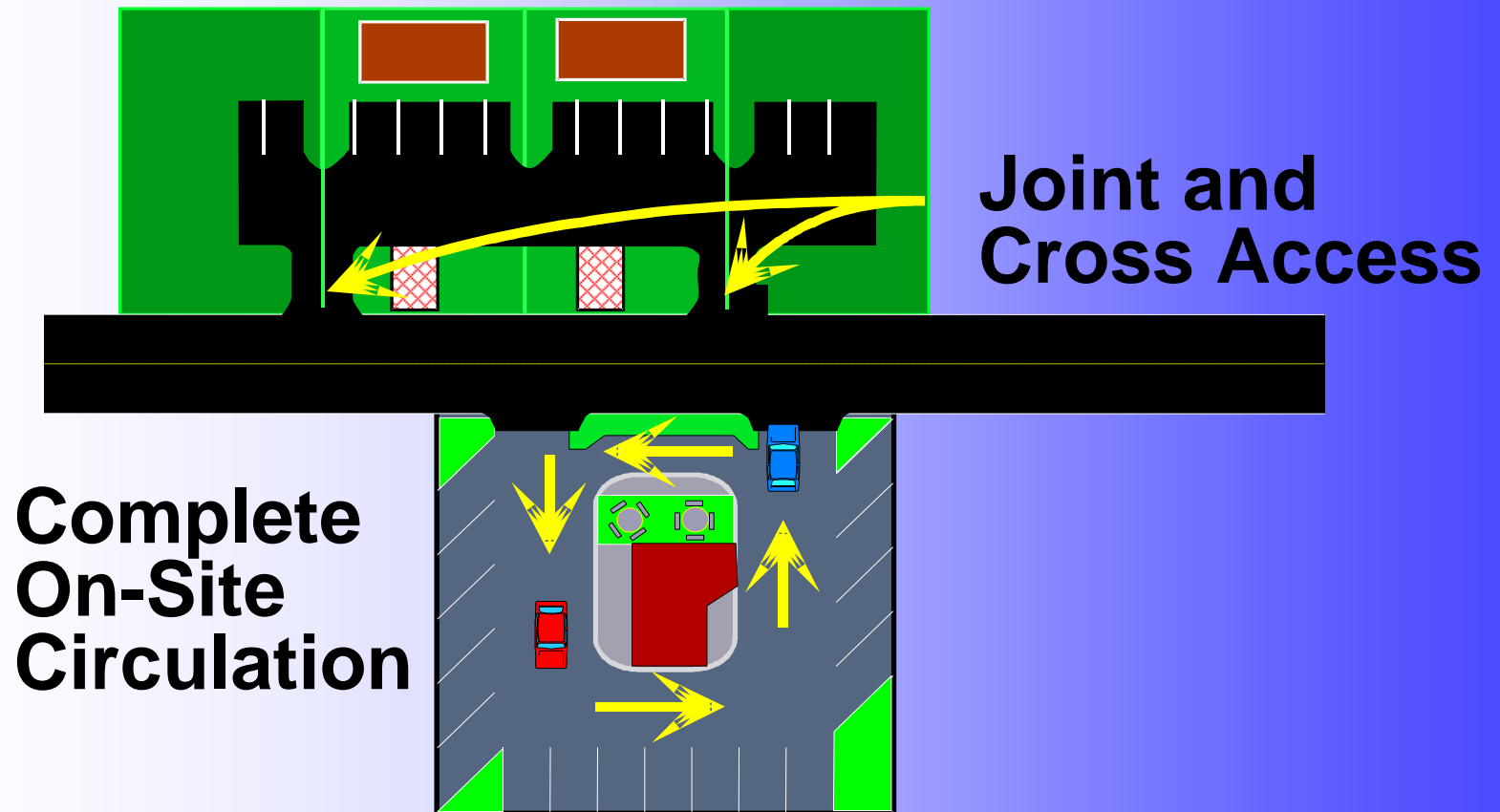




# Loading Docks

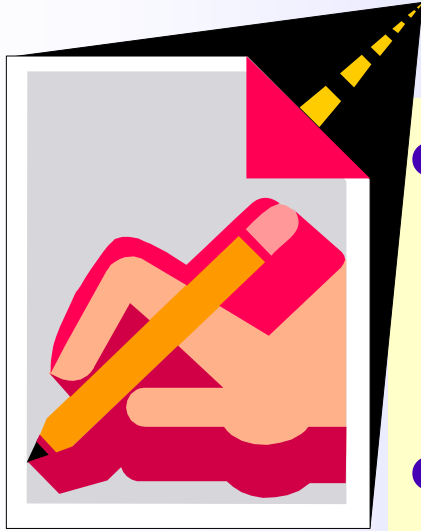


# Joint and Cross Access



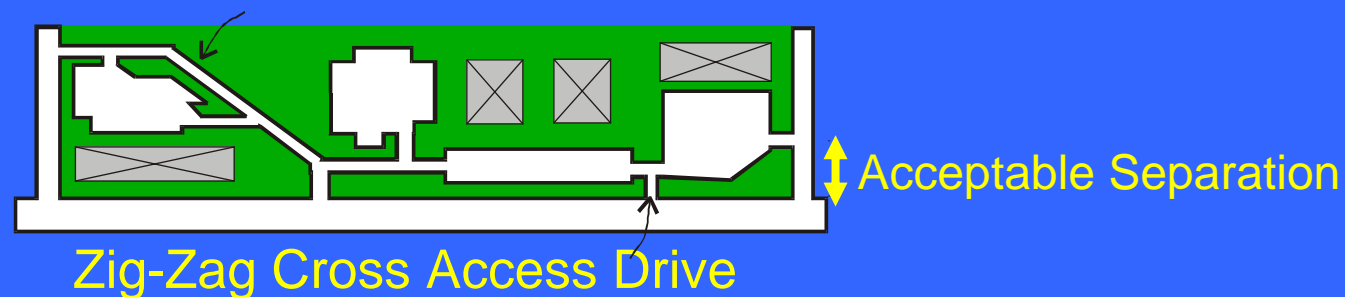
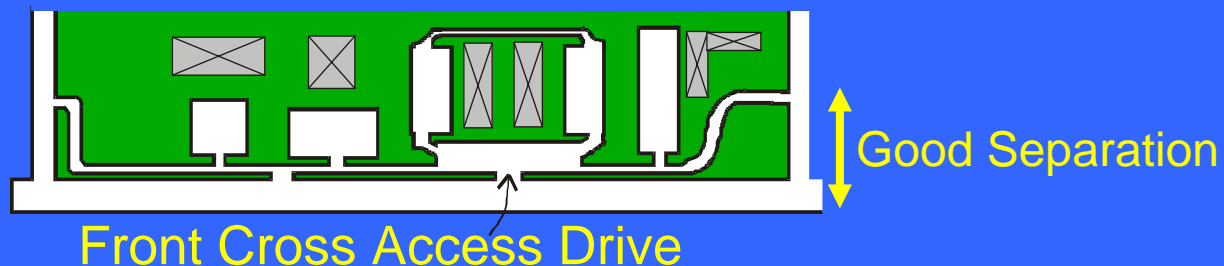
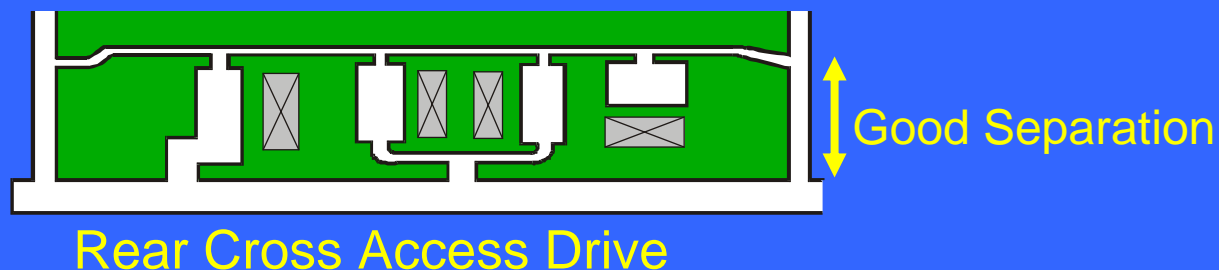


# Cross Access Agreements



- Property owners must record cross access easement
- Agreement to close temporary driveways
- Joint maintenance agreement

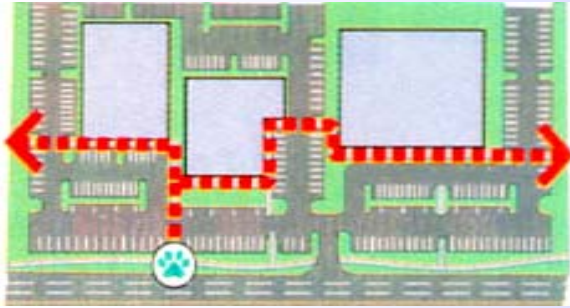
# Cross Access Corridor Overlay - City of Orlando



# Blocked Pedestrian Connection



# Pedestrian Connections



- Pedestrian ways shall be provided between parking areas and from the building entrance to surrounding streets, external sidewalks, and outparcels.

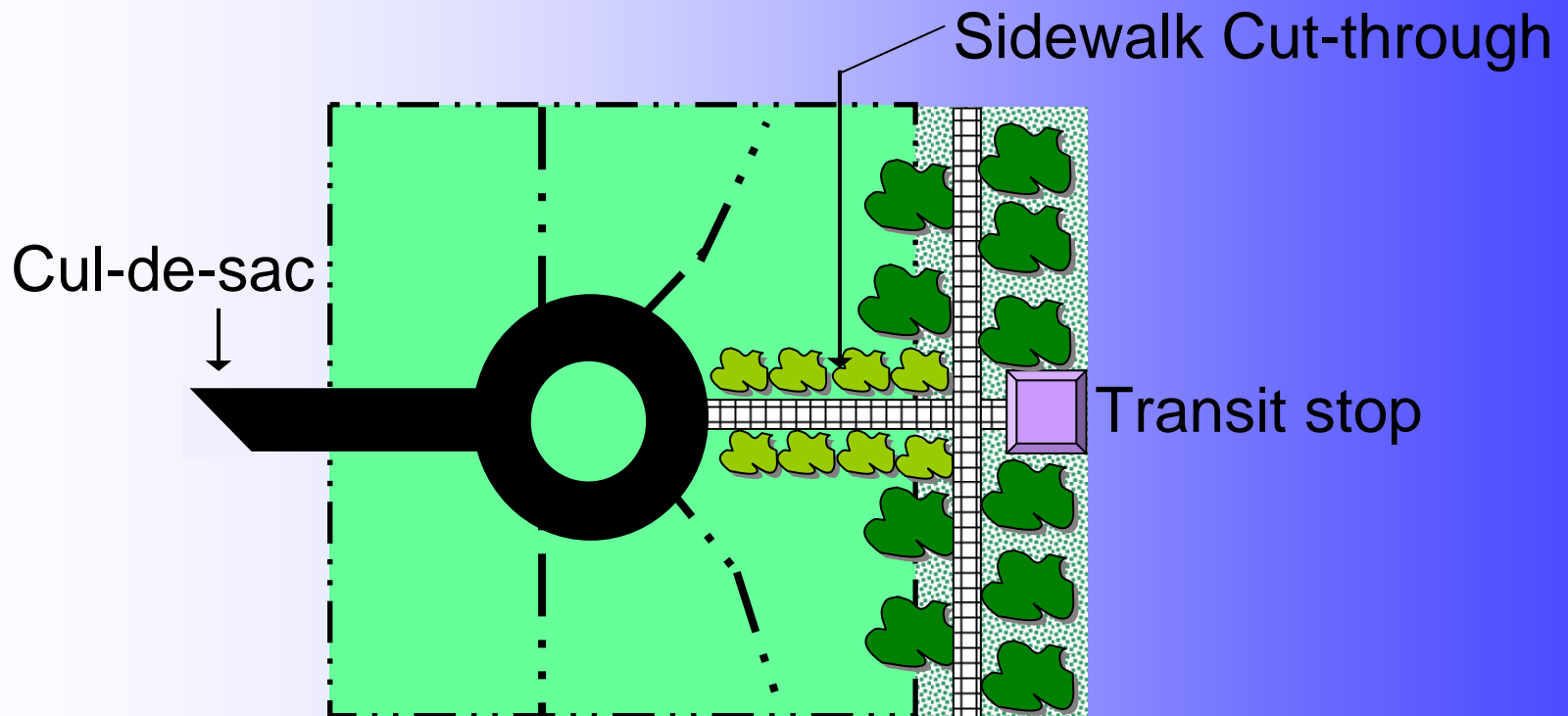
## Sample regulation

Pedestrian paths connecting adjacent buildings may be incorporated into the required landscape buffer.



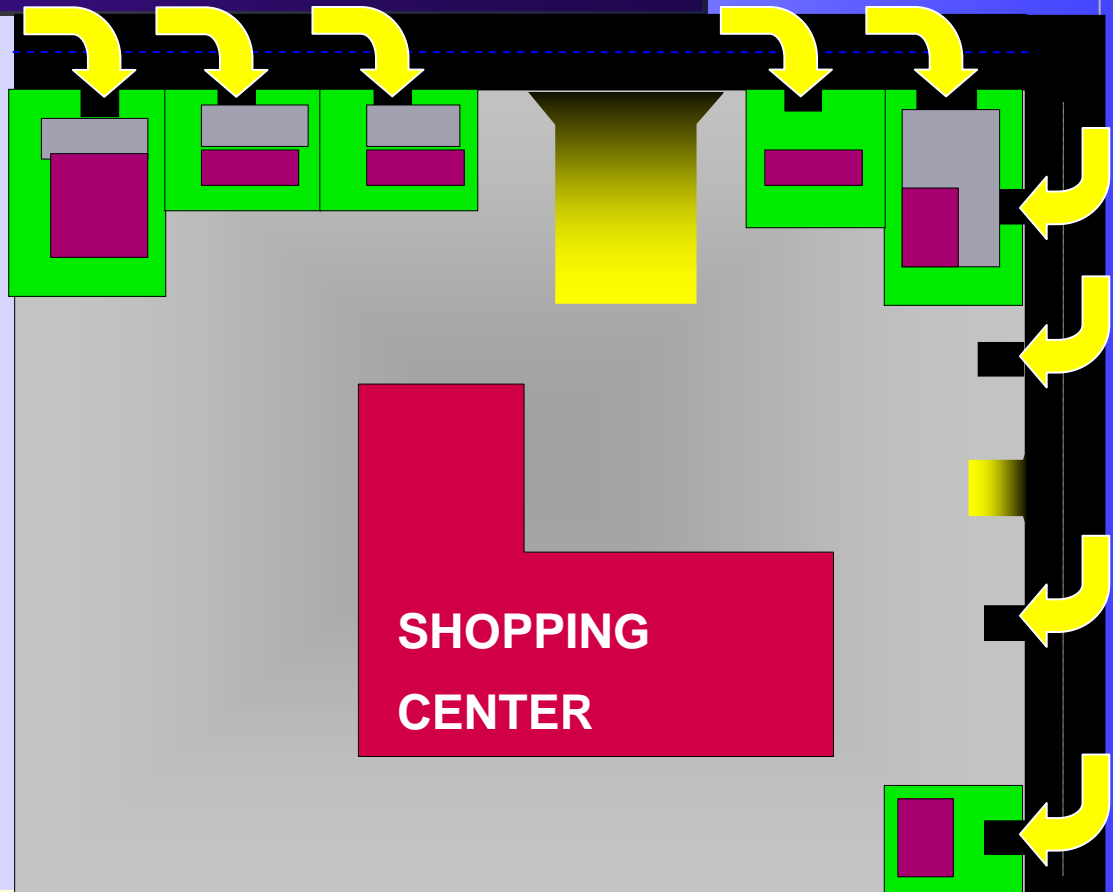
# Bike/Ped Connections

- A *10 foot wide* pedestrian easement shall be provided to connect cul-de-sacs or to pass through blocks in excess of *660 feet*.



# The Problem with Outparcels

- Increased demand for arterial access

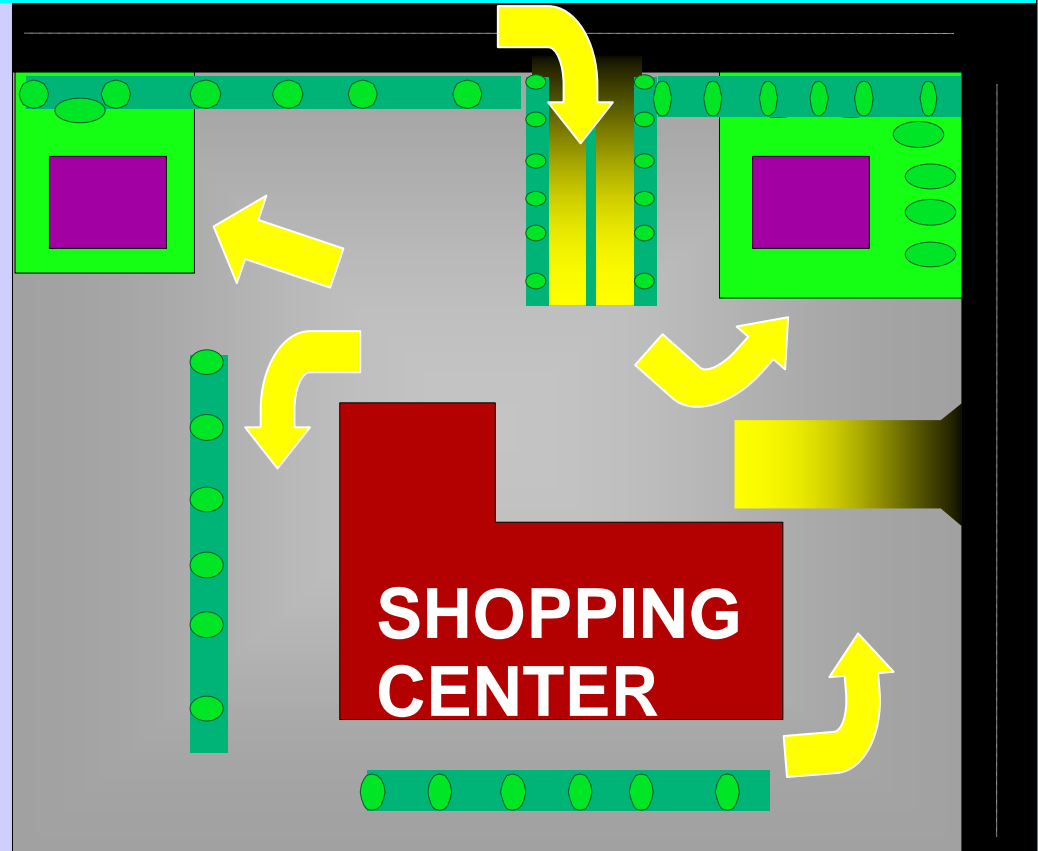


**Site plans often fail to coordinate on-site circulation and access**

# Unified Access & Circulation - Outparcel Regulations

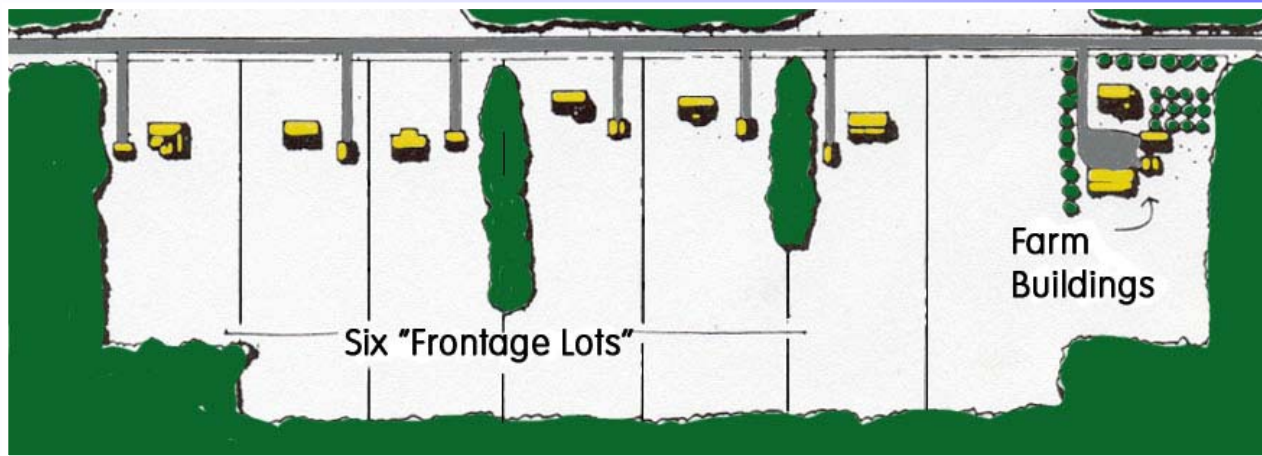
See Orlando, FL; Pembroke Pines, FL; FL AM Model

- Review entire site as one property
- Require unified parking and circulation plan
- Limit number of outparcels and/or increase minimum lot frontage

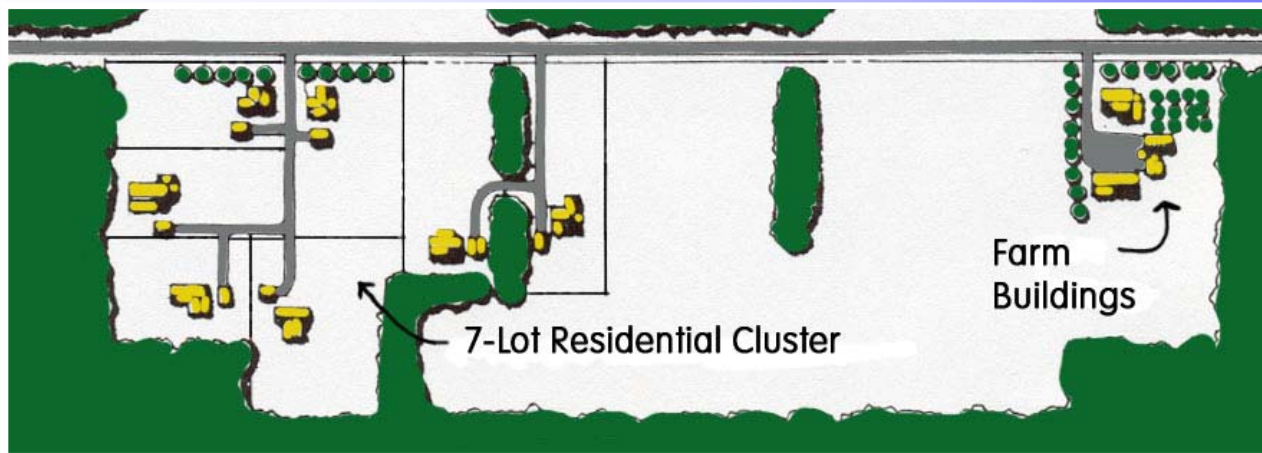




# Rural Residential Access - Cluster Strategy in *Rural by Design*



Typical strip



Cluster with shared drive

Source: Tughill Commission, NY as in *Rural By Design*, APA, 1994.





# Street Networks and Corridor Management

# Strip lots and inadequate street networks...

What we need are more collector and local streets





# Street Network Concept Plan for Major Highway Corridor



Source: New Jersey DOT

Street network plans are an important part of corridor access management.

# Ft. Collins Master Street Plan



- Master street plans create a framework for a balanced and connected street network.

# ROW Preservation Strategies

- Require preservation of ROW as a condition of plat or site plan approval
- Mandatory dedication of ROW proportionate to impacts per traffic study
- Compensate property owners as appropriate through impact fee credits, density transfers, cash, or combination of methods.



# Indian River County Thoroughfare Plan



- Based on needs in MPO 2020 LRTP, and supported by comp plan policies requiring:
  - Land dedication in plat and site plan approval
  - Acquisition of additional ROW at intersections
- Ordinance requires compensation for ROW > 60ft. through traffic impact fee credits, density transfers, or purchase

# Neighborhood & Sector Plans

With variety of design types



Nashville (TN) - Lenox Village

-  Section A: Two-Way Street w/ Informal Parking
-  Section B: Two-Way Street w/ Informal Parking
-  Section C: Two-Way Street w/ Parallel Parking
-  Section D: Two-Way Connector Street w/ Parallel Parking
-  Section E: Two-Way Village Core Angled Parking Street
-  Section F: Village Entry Street
-  Section G: Two-Way Village Core Main Street
-  Section H: Village Green
-  Section I: Two-Way Village Connector Street w/ Parking
-  Section J: Two-Way Street
-  Section K: Two-Way Lane w/ Parallel Parking Bays
-  Section L: Residential Alley



# Subdivision Connectivity Issues



0 0.25 0.5 1 Miles

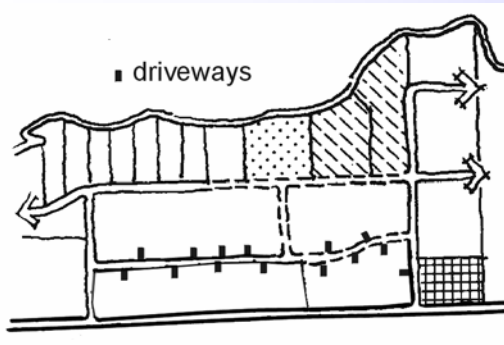
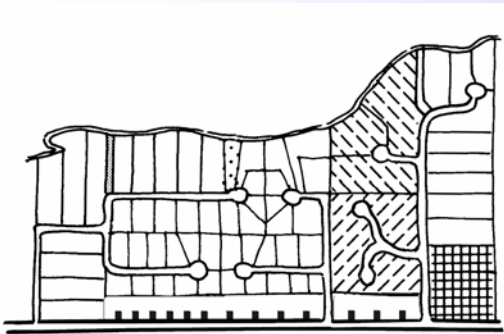
- |               |                     |              |               |
|---------------|---------------------|--------------|---------------|
| State Road 26 | Planned Development | Industrial   | Residential   |
| Interstate 75 | Commercial          | Agricultural | Other/Unknown |





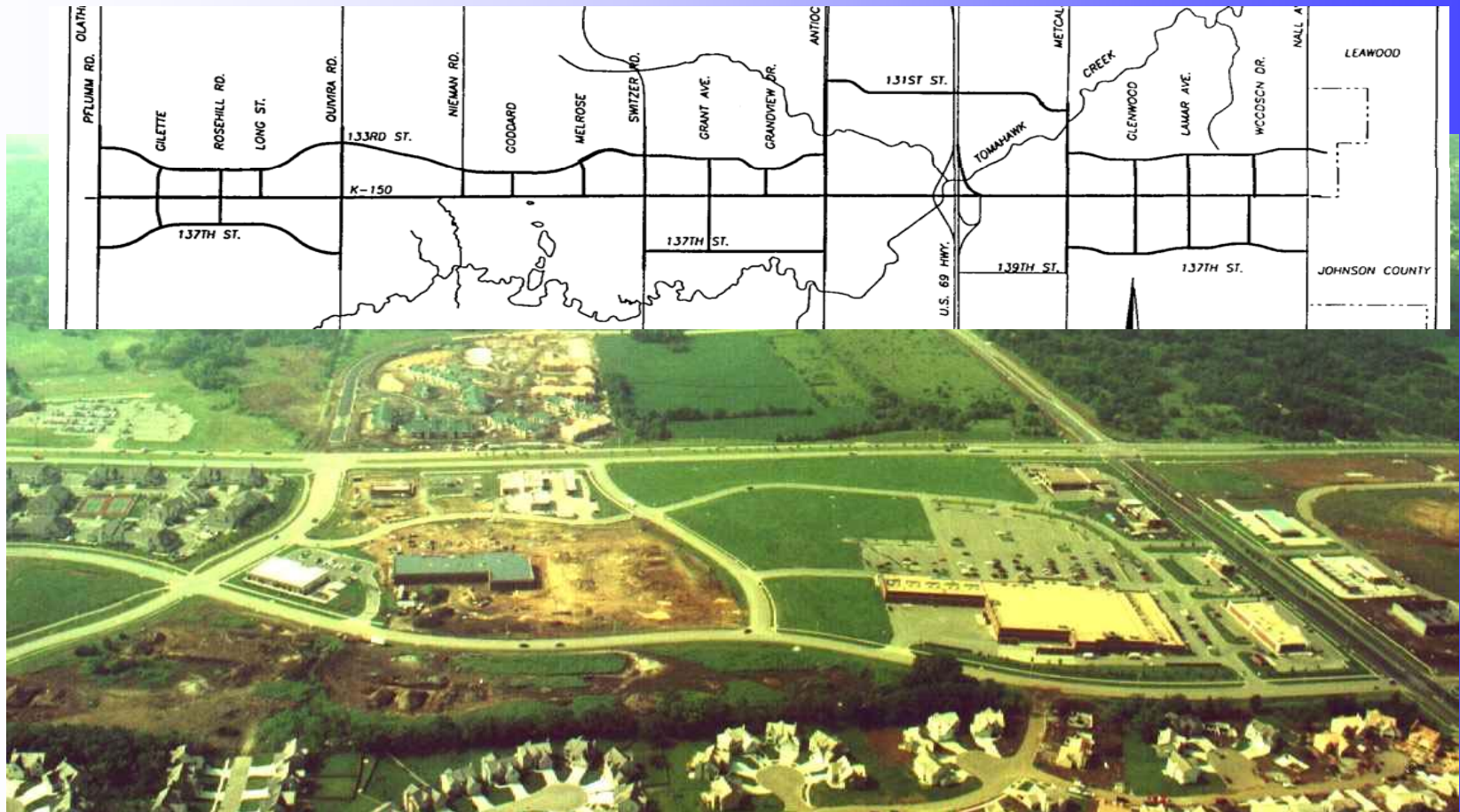
# Street Network Standards

See Fort Collins, CO; Eugene, OR; FL MMTD Model



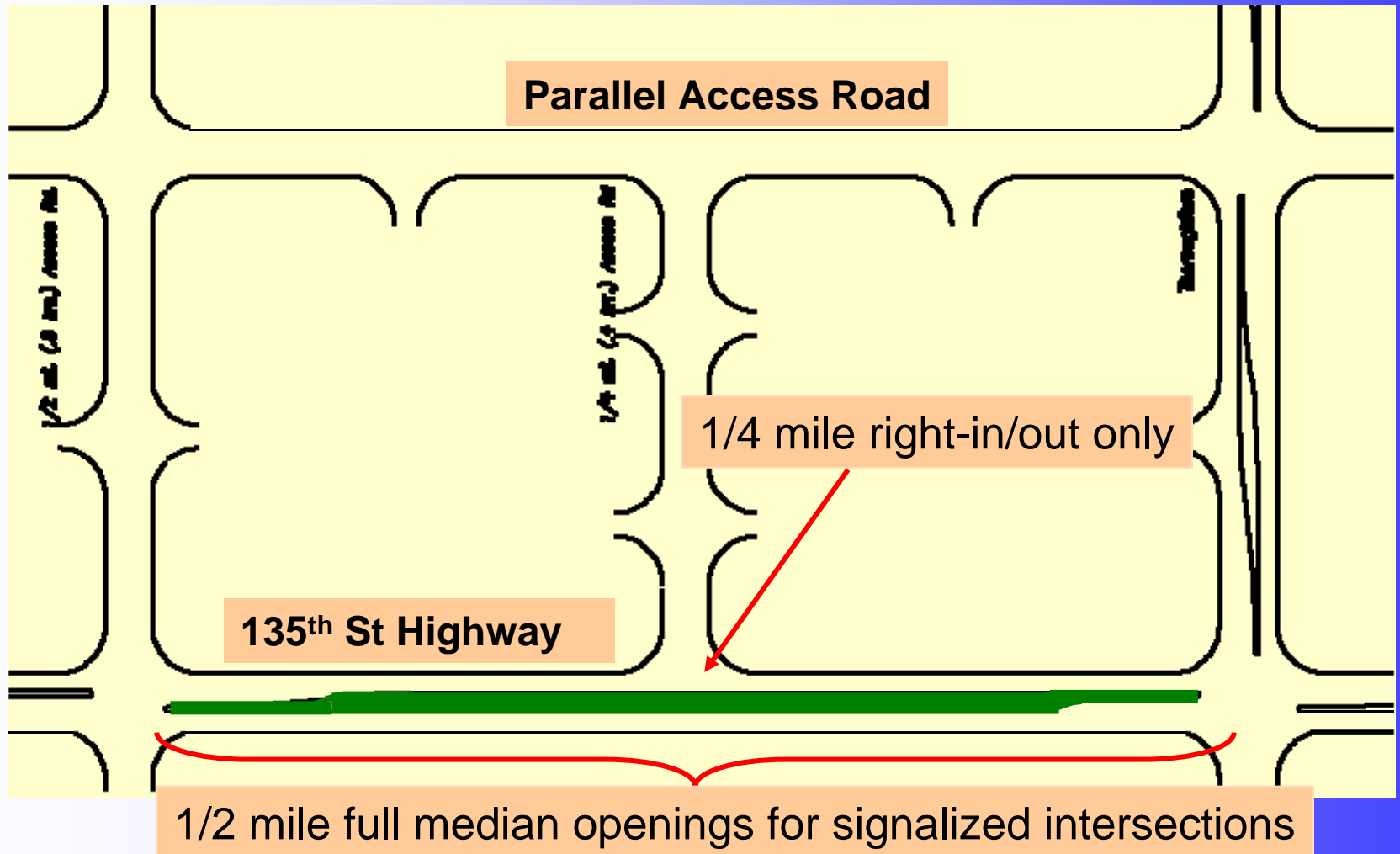
- ¼ mile signalized street spacing or as provided in AM plan/standards
- 660 ft unsignalized street spacing
- Developments must
  - include street connections in direction of all existing or planned streets in same section mile (*or ¼ mile radius*)
  - continue any street that abuts, is adjacent to, or terminates at the site

# Corridor Plans & Studies



135<sup>th</sup> Street Acc. Mgt. Plan, Overland Park, Kansas

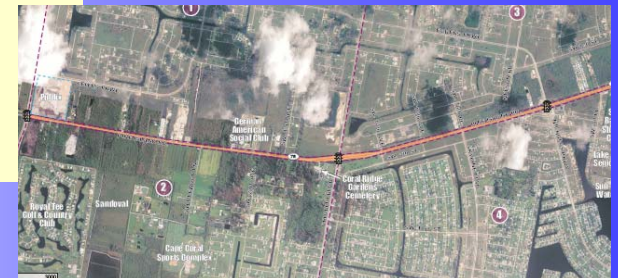
# Access Limitations in 135<sup>th</sup> St Plan



# SR 78 Access Management Plan

## City of Cape Coral

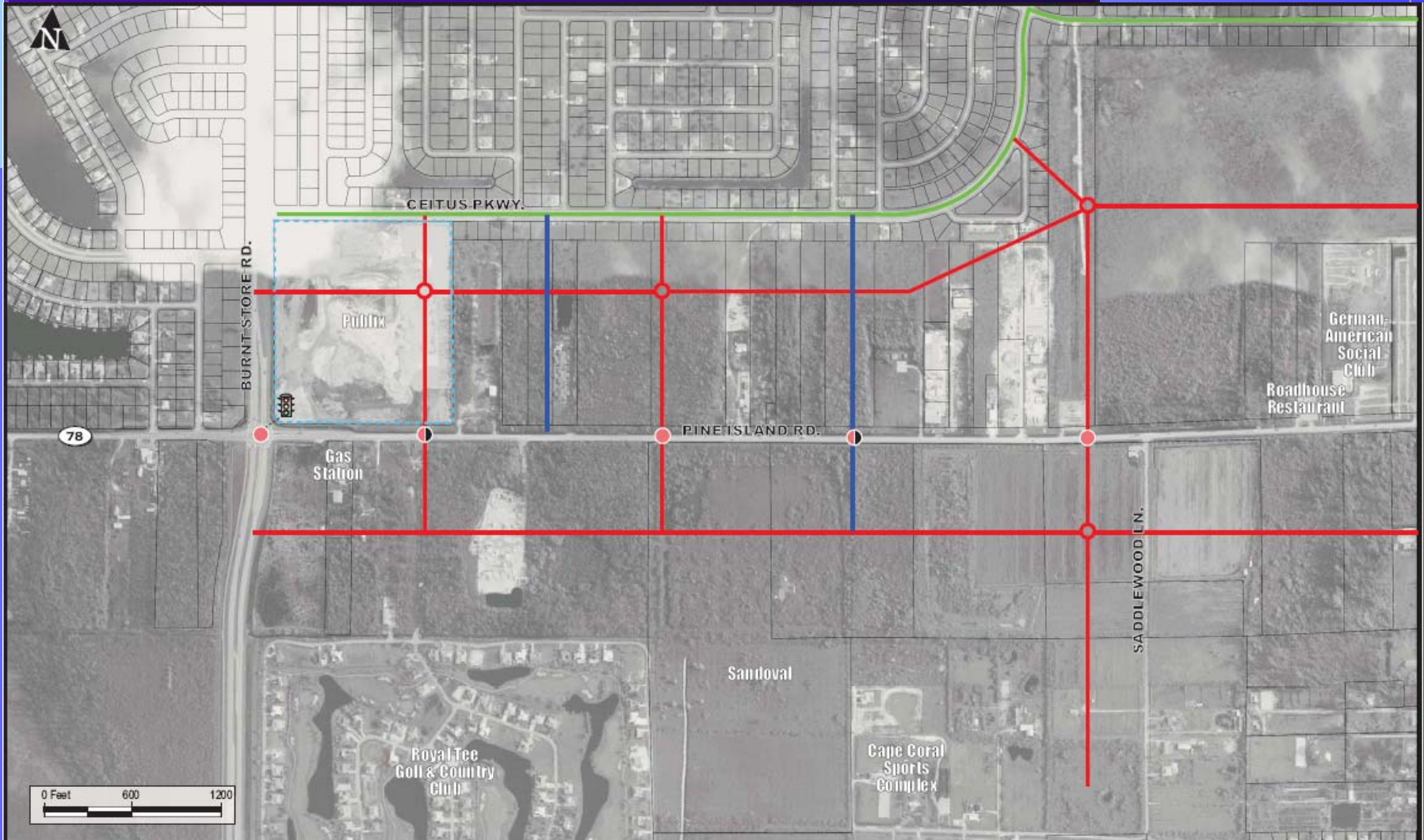
- Collector streets parallel to and intersecting with Pine Island Road
- Strictly limit site access to Pine Island Road and permit interim access with conditions
- Unified on-site circulation within and between developments on Pine Island Road (i.e., parking lot cross access)
- Side street access set back from roadway intersections
- Lot split controls





# Parallel Roadway Concept

## City of Cape Coral

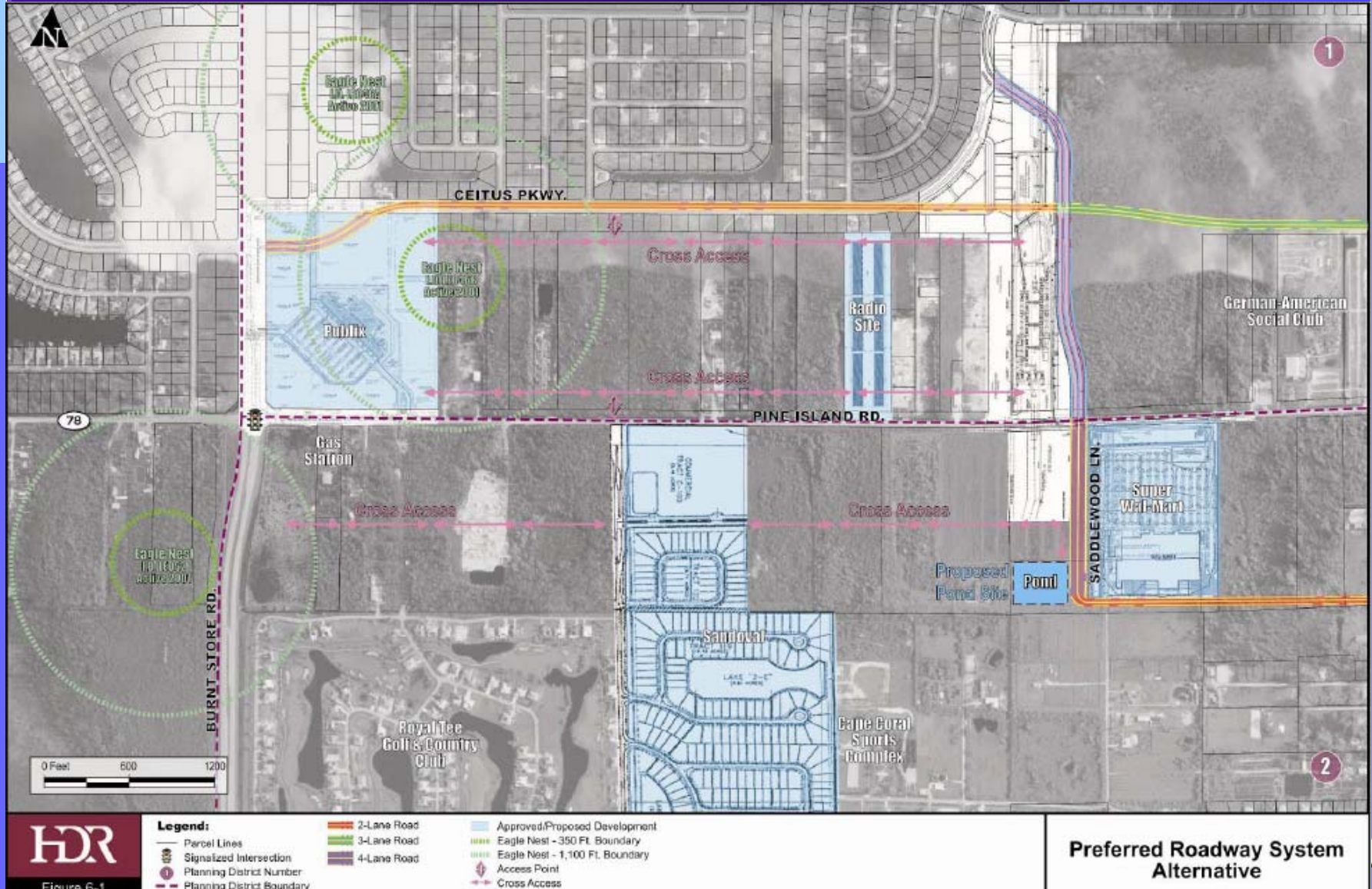


### Legend

- Parcel Lines
- Signalized Intersection
- Full Median Opening
- Directional Median Opening
- Existing Local/Potential Collector Street
- New Collector Street
- New Internal Street
- Existing Internal Street

# Parallel Roadway Concept

## City of Cape Coral

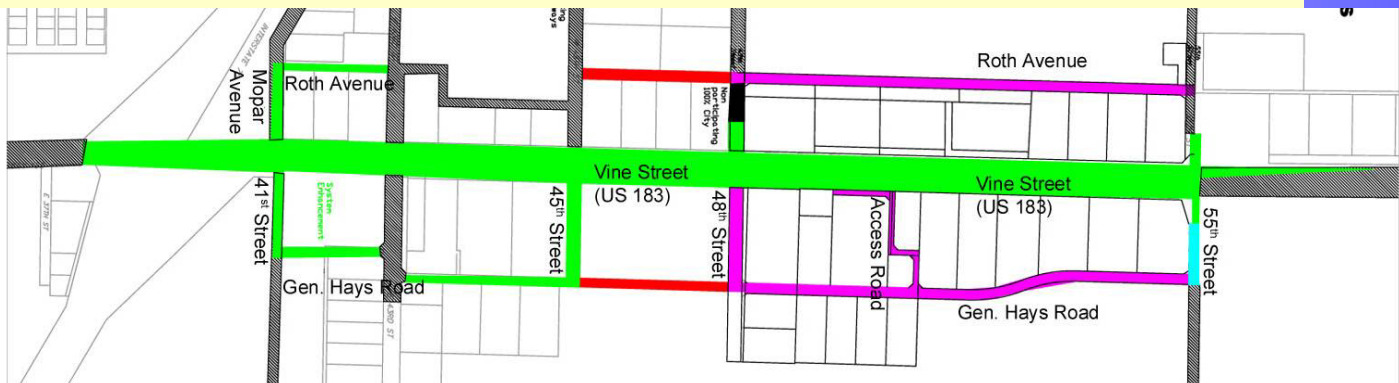




# U.S. Highway 183, Vine Street Corridor Master Plan



- Reverse access roads
- ROW dedicated by property owners
- Funding 2/3 KDOT and 1/3 City
  - City allowed to apply value of dedicated ROW toward their 1/3 match



# Hernando County, FL

## 1988 Frontage Road Ordinance

- Developers required to plan for frontage roads on designated corridors and provide funding to County
- Temporary driveways
- FDOT a partner in implementation
- Issues include funding for gaps and inadequate separation at intersections





# Problems with Frontage Roads



Confusing intersection as frontage road intersects with a major side street.

# Problems with Frontage Roads





# Residential Frontage Road



Frontage roads can work well for residential or light office uses when they begin and end between major cross streets.



# Rear Service Road

Note how the service road flares out to provide good separation at the side street.

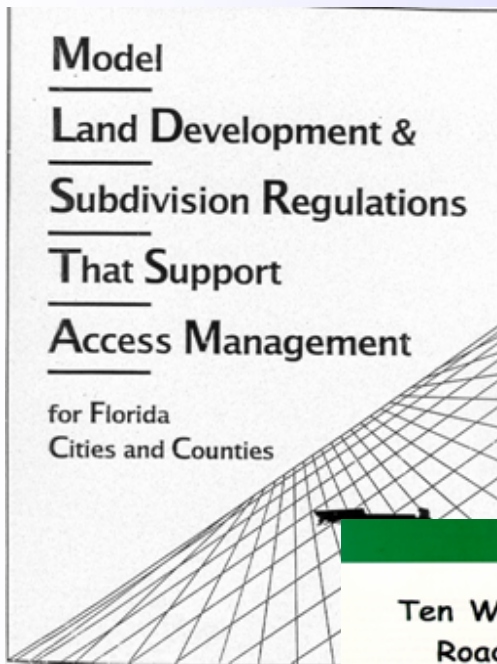
Source: Vergil Stover



# Summary

- Require alternative access during subdivision and development process
- Adopt street network plans
- Manage minor land division activity
- Look for opportunities in road improvement process
- Earmark funds for this purpose

# Other Resources from CUTR



Final Report  
FDOT Contract Number: BC-137-47

## Model Regulations and Plan Amendments for Multimodal Transportation Districts



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April 2004



PLUS  
Model ROW  
Preservation  
ordinance and lots  
more!

# For Further Information

[www.cutr.usf.edu](http://www.cutr.usf.edu)

*Research Programs,  
Planning & Corridor Management,  
Publications*



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# Thanks for Coming!

