Cracking the Code: Understanding the Role of Policies in Green Development



Gary Mitchell, AICP Vice President

KENDIG KEAST

Show of Hands ...



How many deal with ordinances and/or development review?

Focus Today

- Sampler of green practices in development ordinances
- Relatively easy things to do ... but "Texas appropriate"?
- Compare notes on your successes and challenges

But not ...







Incentives:

- Hydrologic impacts
- Water demand
- Private covenants requiring USGBC "Silver" rating or EnergyStar qualified



Bioswales

Green Infrastructure



"Nuts & Bolts"

- Pre-development
- Street design
- Sidewalks
- Street lighting
- Parking
- Site and building design

Accessory uses and structures



ZEMURRAY LAKES

RESIDENTIAL SUBDIVISION

680 LOTS 495 ACRES DEVELOPER NORTH RORTY HOR SCOTT SANDAGE DATE OF PRELIMINARY HEARING MAR. 12, 2007. TIME: 520 PM LOCATION: TANGPAHOA PAPESH HEALTH UNIT

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Pre-Development

Article 1



Sec. 1.102 Development Types

- A. **Types of development regulated.** No land shall be developed except in accordance with this Code. All the following are considered development that is subject to the applicable requirements of this Code.
 - 1. Use. The use of any building, structure, land, or water. Every use shall comply with the applicable requirements of this Code. Every new or expanded use shall comply with the requirements of the zoning district in which it is located, and shall require a building permit (for construction of buildings and structures), and a certificate of occupancy for the construction, modification, use, or occupancy of any lot, parcel, building, or structure as specified in this Code.
 - 2. Land clearing. Land clearing in anticipation of development for non-agricultural purposes shall be authorized by the issuance of a land clearing permit, and shall only be in accordance with approved plans. Where land clearing permits are not required, land shall not be cleared for installation of infrastructure until all required development approvals (*e.g.*, subdivision plat or development plat) are granted.
 - 3. Other disturbance or alteration. Any other disturbance of land, soil, vegetation, or waterways, including alteration of land for development or other purposes, shall conform to the applicable standards contained in this Code and shall require a permit prior to commencing any work.

Sec. 14.401 Site Permit Requirements

- A. Generally. A site permit is required as set out in Section 14.202, Administrative Permits. By way of example and not limitation, development activities that require a site permit include, but are not limited to:
 - 1. Tree removal in excess of:
 - a. Three non-exempt trees within a one calendar year period; or
 - b. If the parcel or lot contains more than one acre of tree canopy, three non-exempt trees per acre within the tree canopy within a one calendar year period.
 - Any excavation, fill, or earthmoving involving an earthwork quantity greater than 10 cubic yards.
 - 3. Construction, paving, or re-paving of any driveway, private street, parking lot, sidewalk or path.
 - 4. Construction of any paved surface larger than 100 square feet in area.
 - Construction or installation of any sewer, pipe, swale, or ditch for drainage purposes, except footing tiles or roof drainage interior to a structure.
 - Installation of any exterior lighting for any site or use except single-family, duplex, twin home, or three-plex units.

24 hours notice
Erosion control
Sediment removal

Street Design



Street Connectivity Ratio: # street links # nodes = 1.2+

Well Done!







Flexible Standards

Sec. 8.205 Performance Standards For Residential Streets

- A. **Floodplain Areas.** In floodplain areas, narrower rights-of-way may be approved and drainage accomplished in a manner that provides for the minimum width, while accommodating the stormwater movement. The City Engineer shall assist in developing an acceptable cross-section that minimizes environmental impact.
- B. Traffic Calming. Straight, or nearly straight, sections of residential streets of a length greater than 500 feet shall be designed to include traffic calming devices (See Section 8.211, Traffic Calming).
- C. Stormwater.
 - 1. Where a curb is designated, an enclosed stormwater conveyance system shall be included, or curb breaks or turnouts shall lead to open systems, which shall be designed pursuant to subsection C.2., below.
 - 2. On roads without curbs, bioswales, natural stream channels or ditch drainage shall be used, unless they are unacceptable to the City Engineer due to capacity, environmental sensitivity, topography or other feature of the land.
- D. On-Street Parking. On-street parking requirements are outlined in Article 9, Parking, Loading, Access, and Lighting.
- E. **Mid-Block Pedestrian Connections.** Mid-block connections in the form of public access easements and walkways shall be provided along blocks that are 500 feet or greater in length, to establish linkages between blocks and, particularly, to common facilities such as parks and open areas.

Versus "one size fits all"

Table 8.202B TND Street Configurations											
Classification	Туре	Min. Right- of-Way	Max. ADT	Min. Travel Lanes	Min. Vehicle Travel Travel Lane nes Width		1in. Clear Sidewalk Width	On-Street Parking			
Collector	Primary Boulevard	110 ft.	-		12		10 ft.	Not allowed			
Collector	Boulevard	72 ft.	-	Versus 60 foot or 50 foot typical ROW standard			8 ft.	Allowed			
Local	Main Street Mixed-Use	67 ft.	-				10 ft.	Allowed			
Local	Green Streets	58 ft.	< 1,6 ,0				5 ft.	Allowed			
Local	Main Street Residential	57 ft.	-				5 ft.	Allowed			
Local	Small Streets	47 ft.	-	2	8 ft. in G or E subdistricts; 9 ft. in C	5 ft.		Allowed			
Local	Small streets that abut parks or plazas	43 ft.	< 2,500	2	10 ft.	8 ft. (one side)		Allowed			
Local	Small streets that abut parks or plazas	37 ft.	< 1,000	 Curb radii approved by: Fire Department (and any alternate curb treatments) Solid waste service provider 							
Local	One-way streets that abut parks or plazas	32 ft.	< 1,000								
Alley	Alley	20 ft.	-								
ISD for likely bus routes											

Bike/Ped Circulation

Sec. 8.205 Performance Standards For Residential Streets

- E. Mid-Block Pedestrian Connections. Mid walkways shall be provided along blocks blocks and, particularly, to common faciliti
- Public access easement
- Through blocks
 >500 feet long
 Esp. to parks, schools



Sidewalks & Pathways

- D. **Modification of Sidewalk Requirements.** Sidewalk requirements may be altered or waived if a sidewalk plan that provides equal or greater pedestrian circulation is submitted to and approved by the Planning and Zoning Commission at the time of platting. These trade-offs may be permitted:
 - 1. The parcel proposed for development is located in an Estate Residential (RE) zoning district;
 - Better pedestrian and bicycle access and connectivity is provided through the use of off-street trails or multi-use pathways that connect to sidewalks or other off-street trails or multi-use pathways on the perimeter of the parcel proposed for development; and
 - 3. Lot frontages are greater than 150 feet.



Street Lighting

PROGRESS CALVESTON

Diagnostic of Existing Zoning & Development Regulations

Galveston Planning & Development Regulations

- Prior standard required light every 150 feet
- New subdiv regs allow 300 foot spacing west of 8-Mile Road

Extent of street lighting given "dark skies" objectives







Parking

- <u>Maximum</u> parking caps, not just minimum standards
- Credits for on-street and public lot parking
- Up to 25% automatic reduction for shared parking
- Required bike parking if 20+ vehicle spaces





Table 24-547.B: Shared Parking Table											
Use	Night (12AM to 6AM)	Day (6AM to 6PM)	Evening (6PM to 12AM)	Day (6AM to 6PM)	Evening (6PM to 12AM)						
Residential	100%	60%	90%	80%	90%						
Office	5%	100%	10%	10%	5%						
Retail / Commercial	5%	70%	90%	100%	70%						
Commercial Lodging	80%	80%	100%	50%	100%						
Restaurant	10%	50%	100%	50%	100%						
Entertainment	10%	40%	100%	80%	100%						
All Others	100%	100%	100%	100%	100%						
Example Shared Parking Calculation (for a development with the mix of uses quantified below):											
50 Multi-Family Units (75 required spaces)	75	45	68	60	68						
100,000 sq ft Office (300 required spaces)	15	300	30	30	15						
200,000 sq ft Retail (800 required spaces)	40	560	720	800	560						
300-Room Hotel240(300 required spaces)		240	300	150	300						
6,000 sq ft Restaurant (60 required spaces)	6	24	60	48	60						
1,535 required spaces	376	1,169	1,178	1,088	1,003						

Result: A reduction in the required number of parking spaces from 1,535 to 1,178. This is 357 fewer spaces, or a 23% parking reduction.

Surface Parking Dispersion

 145-foot max length of any surface parking edge

 Max area of 21,025 sq ft (~1/2 acre)



Site & Building Design



- **1.** Reflective + green roof
- 2. Permeable paving (pathway)
- 3. Rain garden
- 4. Close bike/vanpool parking

- 5. Bioswales amid parking
- 6. Convenient access to transit
- 7. Natural lighting
- 8. Pedestrian improvements

































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PERVIOUS PAVEMENT



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Renewable Energy

Sec. 2.553 Wind Energy Conversion Systems

- A. Generally.
 - Small wind energy conversion systems are wind turbines that are designed to generate 100 kW or less. They
 are permitted as an accessory use to residential uses pursuant to the standards of this Section that apply to small
 wind energy conversion systems.

CITY OF VALPARAISO INDIANA

2. Wind farms are wind energy conversion systems that are designed to generate more than 100kW. Wind farms are permitted in the Heavy Industrial (INH) district subject to the standards of this Section that apply to wind farms.



Wind farms permitted in Ag, Industrial zones

 Provisions for height, setbacks, noise, electromagnetic interference—and no advertising





Galveston Examples

East End

Evia TND

Solar Orientation Standard

"Buildings shall be oriented on the site to optimize passive solar heating and cooling opportunities."

"Windows shall be placed to maximize solar penetration during the winter months and minimize solar penetration during the summer months."

Town of Epping, NH

Solar Orientation Standard

"Subdivisions shall fit and take advantage of topography and solar orientation to the end that good building sites are provided and utilities can be provided most economically."

"Streets shall be designed so that at least 80% of the building in the subdivision can be oriented with their long axes parallel to 9° south of West with a possible variation to 6° north of West or to 25° south of West."

City of Port Arthur, TX

Preservation of Solar Access

Sec. 14-105 - Solar Access Requirements. "When a solar energy collection system is installed on a lot, accessory structures or vegetation on an abutting lot shall not be located so as to block the solar collectors' access to solar energy."

City of New Pattonsburg, MO



Sec. 3.605 Accessory Units

- A. Generally. A single-family home with an accessory unit is a two-family dwelling unless the accessory unit is built in accordance with this Section.
- B. Location. Accessory units may be built in a cluster single-family subdivision, a planned subdivision, or a traditional neighborhood. The accessory apartment is exempted from the calculation as a dwelling unit when determining the maximum density in Table 3.201.A., Residential Use District Standards.

Permitted if standards met:

- 1 bedroom, bathroom max
- 20% max of total structure
- Not on lots < 6,000 sq ft
- Extra setback/screening?
- Propose at preliminary plat:
 - Density implications
 - Design review
 - Plat note

Accessory Dwelling Units





COURTESY: Ryan Olson

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Accessory uses and structures