AGENDA – WORKSHOP OF THE PLANNING & ZONING COMMISSION OF THE CITY OF PEARLAND, TEXAS, TO BE HELD ON MONDAY, DECEMBER 6, 2010, AT 6:00 P.M., IN THE 2nd FLOOR CONFERENCE ROOM, CITY HALL, 3519 LIBERTY DRIVE, PEARLAND, TEXAS.

I. CALL TO ORDER

II. PURPOSE OF THE WORKSHOP:

1. **COMMISSION INPUT AND DISCUSSION: LAND USE MATRIX CONTINUATION –** *presented by Mr. Evan DuVall, Planner II*

2. **COMMISSION INPUT AND DISCUSSION: CAPITAL IMPROVEMENT PLAN 2011-2015 UPDATE –** *presented byTrent Epperson, Projects Director*

3. **COMMISSION INPUT AND DISCUSSION: THE SPECTRUM AREA MASTER PLAN STUDY BY GATEWAY PLANNING GROUP –** *presented by Lata Krishnarao, Planning Director*

III. ADJOURNMENT

This site is accessible to disabled individuals. For special assistance, please call Young Lorfing at 281-652-1653 prior to the meeting so that appropriate arrangements can be made.

WORKSHOP

1

Land Use Matrix: Part 1

Agricultural Uses

Types of Land Uses	Residential Zoning Districts											Mixed Use Districts									Non-Residential Zoning Districts						
												SPD															
	SD	R-E	SR-15	SR-12	R-1	R-2	R-3	R-4	TH	MF	MH	S1	S2	S3	S4	S5	C-MU	G/O-MU	OT	RRN	OP	BP-288	NS	GB	GC	M-1	M-2
Agricultural Field Crops	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	+	P	P	P	P	P	P	P	P
Farm (Ranch, Livestock) □🕮	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	+	P	P	P	P	P	P	P	P
Crops or Orchard	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	+	P	P	P	P	P	P	P	P

Entertainment & Recreational Uses

Possible Category 1

Billiard/Pool Facility (Three or More Tables)												C					C	C	+		C	C	C	P	P		
Bowling Alley (Air-Conditioned and Sound Proofed)												C					C	C	+		C	C	C	P	P		
Commercial Amusement, Outdoor □🕮												C					C	C	+		C	C	C	P	P		
Dinner Theatre												C					C	C	+		C	C	C	P	P		

Possible Category 2

Golf Course (Miniature)												C	C	C	C	C	C	C	+		C	C	C	P			
Golf Course (Private) □🕮												C	C	C	C	C	C	C	+		C	C	C	P			
Golf Course (Public) □🕮												C	C	C	C	C	C	C	+		C	C	C	P			

Automobile-Related Service Uses

Possible Category 1

Types of Land Uses	Residential Zoning Districts											Mixed Use Districts									Non-Residential Zoning Districts						
												SPD															
	SD	R-E	SR-15	SR-12	R-1	R-2	R-3	R-4	TH	MF	MH	S1	S2	S3	S4	S5	C-MU	G/O-MU	OT	RRN	OP	BP-288	NS	GB	GC	M-1	M-2
Auto Muffler Shop																			+						P	P	P
Auto Paint Shop																			+						P	P	P
Auto Wrecker Service																			+						P	P	P
Boat Sales (New/Repair)																			+						P	P	P
Limousine/Taxi Service																			+						P	P	P
Personal Watercraft Sales (New/Repair)																			+						P	P	P
Tire Sales (Outdoors, With Open Storage)																			+						P	P	P
Truck and Bus Rental																			+						P	P	P
Truck Sales (Heavy Trucks)																			+						P	P	P

Possible Category 2

Auto Assembly																			+						C	P	P
Auto Parts Manufacturing																			+						C	P	P
Auto Parts Sale (With Outside Storage or Display)																			+						C	P	P
Auto Repair (Major) □																			+						C	P	P
Bus or Truck Storage																			+						C	P	P
Motor Freight Transportation, Storage, & Terminal																			+						C	P	P
Truck or Freight Terminal																			+						C	P	P

Possible Category 3

Types of Land Uses	Residential Zoning Districts											Mixed Use Districts									Non-Residential Zoning Districts						
												SPD															
	SD	R-E	SR-15	SR-12	R-1	R-2	R-3	R-4	TH	MF	MH	S1	S2	S3	S4	S5	C-MU	G/O-MU	OT	RRN	OP	BP-288	NS	GB	GC	M-1	M-2
Auto Rental □🕮																			+					C	P	P	P
Auto Wash (Self-Service) □🕮																			+					C	P	P	P

Possible Category 4

Auto Glass Repair/Tinting																	C		+					C	P	P	P
Auto Repair (Minor) □🕮																	C		+					C	P	P	P

Office Uses

Possible Category 1

Financial Services (Advice/Invest)												P	P	P	P	P	P	P	+	C	P	P	P	P	P	C	
Insurance Agency Offices												P	P	P	P	P	P	P	+	C	P	P	P	P	P	C	
Office, Brokerage Service												P	P	P	P	P	P	P	+	C	P	P	P	P	P	C	
Office, Legal Service												P	P	P	P	P	P	P	+	C	P	P	P	P	P	C	
Office, Medical/Dental *{Defined Under Medical Facilities}*												P	P	P	P	P	P	P	+	C	P	P	P	P	P	C	
Financial Institution (No Motor Bank Services) □🕮												P	P	P	P	P	P	P	+	C	P	P	P	P	P	C	
Office, Real Estate												P	P	P	P	P	P	P	+	C	P	P	P	P	P	C	

*Note (Category for Office, Professional and General Business (Other than listed) - More Intense

Office, Professional and General Business (other than those listed)												C	C	C	C	C	C	C	+	C	P	P	P	P	P	C	

Personal & Business Service Uses

Possible Category 1

Types of Land Uses	Residential Zoning Districts											Mixed Use Districts									Non-Residential Zoning Districts						
												SPD															
	SD	R-E	SR-15	SR-12	R-1	R-2	R-3	R-4	TH	MF	MH	S1	S2	S3	S4	S5	C-MU	G/O-MU	OT	RRN	OP	BP-288	NS	GB	GC	M-1	M-2
Rehabilitation Care Facility (Halfway House)																			+		C		C	P	P	P	
Rehabilitation Care Institution (Commercial)																			+		C		C	P	P	P	

Retail & Business Service Uses

Possible Category 1

Restaurant (With No Drive-In or Drive-Thru Service)												P	P	P			C	C	+	C			C	P	P	C	
Studio, Decorator & Display of Art Objects												P	P	P			C	C	+	C			C	P	P	C	
Studio, Photographer, Artist, Music, Drama, Dance												P	P	P			C	C	+	C			C	P	P	C	
Studio, Health Reducing or Similar Service												P	P	P			C	C	+	C			C	P	P	C	
Video Rental and/or Sales												P	P	P			C	C	+	C			C	P	P	C	

Possible Category 2

Types of Land Uses	Residential Zoning Districts											Mixed Use Districts									Non-Residential Zoning Districts						
												SPD															
	SD	R-E	SR-15	SR-12	R-1	R-2	R-3	R-4	TH	MF	MH	S1	S2	S3	S4	S5	C-MU	G/O-MU	OT	RRN	OP	BP-288	NS	GB	GC	M-1	M-2
Personal Custom Services, Tailor, Millinery, Etc.												P	P	P			C	C	+	C			P	P	P	C	
Shoe Store (Retail Only)												P	P	P			C	C	+	C			P	P	P	C	

Possible Category 3

Art Supply Store												P	P	P			C	C	+	C	P	P	P	P	P	C	
Camera Shop (Retail Only)												P	P	P			C	C	+	C	P	P	P	P	P	C	
Copy/Printing Shop □🕮												P	P	P			C	C	+	C	P	P	P	P	P	C	

Possible Category 4

Bakery or Confectionery Shop (Retail Sales, Inside Service Only) 🕮												P	P	P			P	P	+	C	P	P	P	P	P	C	
Book/Stationery Shop (Retail Only)												P	P	P			P	P	+	C	P	P	P	P	P	C	
Café □🕮												P	P	P			P	P	+	C	P	P	P	P	P	C	
Florist Shop (Retail Only)												P	P	P			P	P	+	C	P	P	P	P	P	C	
Drapery/Blind Shop												P	P	P			P	P	+	C	P	P	P	P	P	C	

Institutional/ Governmental Uses

Possible Category 1

Types of Land Uses	Residential Zoning Districts											Mixed Use Districts									Non-Residential Zoning Districts						
	SD	R-E	SR-15	SR-12	R-1	R-2	R-3	R-4	TH	MF	MH	SPD					C-MU	GO-MU	OT	RRN	OP	BP-288	NS	GB	GC	M-1	M-2
Fraternal Organization □🕮	C	C	C	C	C	C	C	C	C	C	C	C	C	C			C	C	+		P	P	P	P	P		
Fraternity or Sorority House □🕮	C	C	C	C	C	C	C	C	C	C	C	C	C	C			C	C	+		P	P	P	P	P		

Possible Category 2

School - Elementary (Public or Parochial)	C	C	C	C	C	C	C	C	C	P	C		C	C	C		C	C	+		P	P	P	P	P		
School - High School (Public or Parochial)	C	C	C	C	C	C	C	C	C	P	C		C	C	C		C	C	+		P	P	P	P	P		
School - Junior High (Public or Parochial)	C	C	C	C	C	C	C	C	C	P	C		C	C	C		C	C	+		P	P	P	P	P		
School - Other Than Public or Parochial	C	C	C	C	C	C	C	C	C	P	C		C	C	C		C	C	+		P	P	P	P	P		

Utility & Related Service Uses (Also see Section 4.2.4.2 - *Screening for Utility Support Structures and Stations*)

Possible Category 1

Franchised Private Utility □ (Other than those listed) 🕮	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	P	C	C	+	C	C	C	C	C	C	P	P
Gas Transmission & Metering Station	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	P	C	C	+	C	C	C	C	C	C	P	P
Radio or Television Transmitting Station (Commercial) {See Telecommunications Regulations, Chap. 2, Art. 5, Div. 5 of the UDC}	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	+	C	C	C	C	C	C	P	P

Possible Category 2

Telephone Exchange Switching Relay & Transmitting Equipment	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	+	C	C	C	C	C	C	C	C
Public Utilities (Other than those listed)	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	+	C	C	C	C	C	C	C	C

Commercial & Related Service Uses

Possible Category 1

Types of Land Uses	Residential Zoning Districts											Mixed Use Districts									Non-Residential Zoning Districts						
	SD	R-E	SR-15	SR-12	R-1	R-2	R-3	R-4	TH	MF	MH	SPD					C-MU	G/O-MU	OT	RRN	OP	BP-288	NS	GB	GC	M-1	M-2
Wood Working Shops																	C	C	+					C	P	P	P
Upholstery Business																	C	C	+					C	P	P	P

Possible Category 2

Plumbing Shop (No Outside Storage)																	C	C	+	C				C	P	P	P
Printing Equipment, Supplies and Repairs																	C	C	+	C				C	P	P	P

Possible Category 3

Moving and Storage Company																			+					C	C	P	P
News Printing																			+					C	C	P	P

Possible Category 4

Manufactured Home Display, Sales and/or Rental (New or Used)																		+						P	P	P
Mattress Making and/or Renovating																		+						P	P	P
Milk Depot - Wholesale																		+						P	P	P
Gravestone/Tombstone Sales																		+						P	P	P
Pet Care Facility/Animal Kennel (With Outdoor Pens) 🕮	C																	+						P	P	P

Possible Category 5

Pipe Storage Yard																		+						C	P	P
Construction Contractor with Storage Yard																		+						C	P	P

Industrial & Related Service Uses

Acid Manufacturer																		+								C
Animal Slaughtering or Poultry Processes																		+								C
Ammonia Manufacturer																		+								C
Carbon Black Manufacturer																		+								C
Cement, Lime, Gypsum or Plaster of Paris Manufacturer																		+								C
Concrete Batching Plant																		+								C
Dumps and Landfills																		+								C
Hazardous Emissions (as Determined by Enforcing Officer & Other Objectionable)																		+								C
Explosives Manufacturer and/or Storage																		+								C
Glue or Fertilizer Manufacturer																		+								C
Manufacturer of Chlorine or Other Toxic Gasses																		+								C
Petrochemical Plant																		+								C
Petroleum or Petroleum Product Extraction, Refining, Manufacturer, or Bulk Storage																		+								C
Rendering Plant																		+								C
Tanning, Curing, Treating, or Storage of Skins or Hides																		+								C

Possible Category 2

Heavy Manufacturing Process																		+								P
Manufacturing, Industrial Storage or Assembly Process Not Prohibited by Law but excluding those listed in Section 2.4.4.6 and Section 2.4.4.7 of this UDC																		+								P
Storage or Processing of Sand, Sulfur, Gravel, Cement or Similar Material																		+								P

Possible Category 3

Wrecking or Salvage Yard (Auto, Steel)																		+							C	P
Wrecking or Salvage Yard (Building Materials)																		+							C	P

WORKSHOP

2

City of Pearland, Texas
Capital Improvement Program
2011-2015

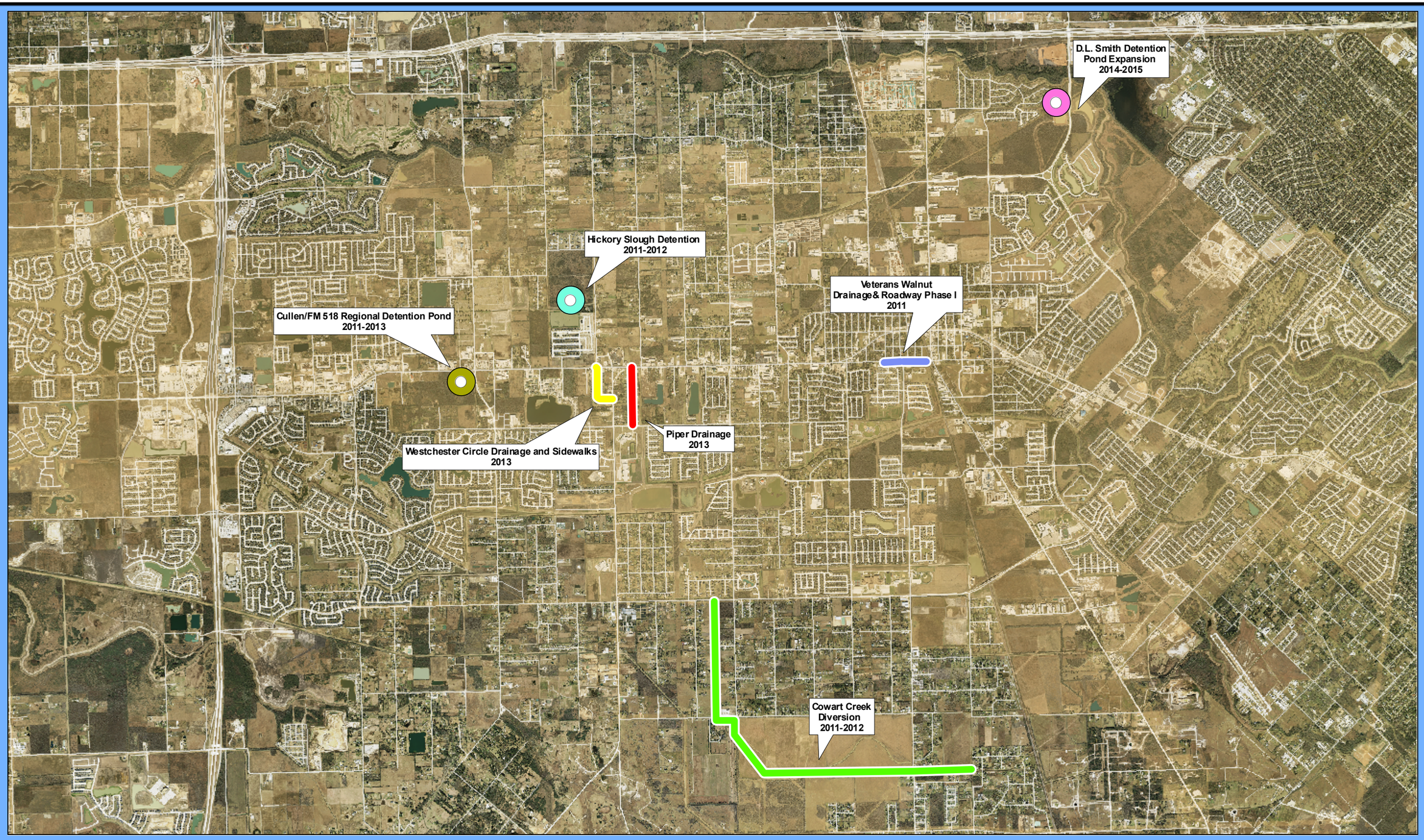
Fire and EMS Station No. 5– Opening January 2011
Rendering

CITY OF PEARLAND
2011 - 2015 CAPITAL IMPROVEMENT PROGRAM
DRAINAGE

Project No.	Project Name	2011	2012	2013	2014	2015	TOTAL
DR0602	Cowart Creek Diversion	1,870,000	1,400,000	-	-	-	3,270,000
DR2007/T70024	Veterans Walnut Drainage & Roadway - Phase I	553,817	-	-	-	-	553,817
DR2003	Hickory Slough Detention at Max Rd.	497,415	6,052,585	-	-	-	6,550,000
DR2002	D.L. Smith Detention Pond Expansion	-	-	-	122,924	2,179,540	2,302,464
DR1301	Westchester Circle Drainage and Sidewalks	-	-	365,411	-	-	365,411
DR1302	Piper Drainage	-	-	528,988	-	-	528,988
DR1401	PER for Future Bond Referendum	-	-	-	1,000,000	-	1,000,000
DR1103	Cullen/FM 518 Regional Detention Pond	250,000	1,724,000	2,598,000	-	-	4,572,000
	TOTAL	**$ 3,171,232**	**$ 9,176,585**	**$ 3,492,399**	**$ 1,122,924**	**2,179,540**	**$ 19,142,680**

SOURCE OF FUNDS	2011	2012	2013	2014	2015	TOTAL
General Revenue - Cash	-	-	-	-	-	-
Certificates of Obligation	-	-	1,551,399	1,000,000	-	2,551,399
Future GO Bonds	2,673,817	6,647,708	4,967,292	-	1,335,618	15,624,435
W/S Revenue Bonds	-	-	-	-	-	-
P.E.D.C.	-	-	-	-	-	-
System Revenues - Cash	-	-	-	-	-	-
Impact Fees - Cash	-	-	-	-	-	-
Impact Fees - Debt	-	-	-	-	-	-
Other Funding Sources	-	-	-	-	-	-
Plus Bonds To Be Sold in Future Year					966,846	966,846
TOTAL	**$ 2,673,817**	**$ 6,647,708**	**$ 6,518,691**	**$ 1,000,000**	**$ 1,335,618**	**$ 19,142,680**

Note: The totals do not tie by year as the City anticipates appropriating funds for GO Bond projects in one year and then selling the bonds in the next year or vice versa.



City of Pearland 2011 - 2015 CIP Drainage

- Cullen/FM 518 Regional Detention Pond 2011-2013
- Hickory Slough Detention 2011-2012
- David L Smith Det. Exp. 2014-2015
- Cowart Creek Diversion 2011-2012
- Veterans/Walnut Drainage and Roadway Phase 1 2011
- Piper Drainage 2013
- Westchester Circle Drainage and Sidewalks 2013

N W E S

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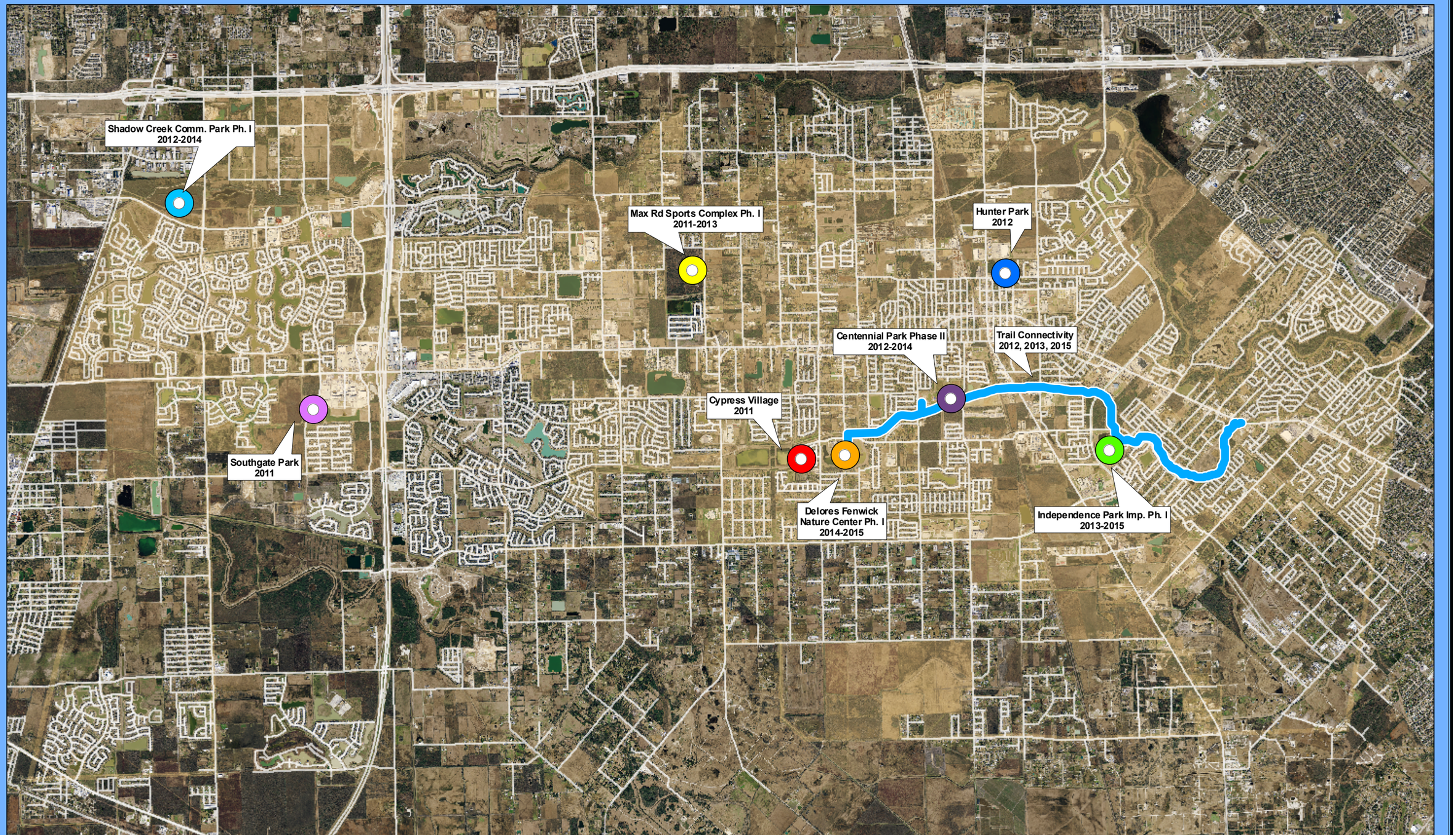
CITY OF PEARLAND
2011 - 2015 CAPITAL IMPROVEMENT PROGRAM
PARKS

Project No.	Project Name	2011	2012	2013	2014	2015	TOTAL
P20006 / P50072	Trail Connectivity	-	725,000	725,000	-	725,000	2,175,000
P20007	Natatorium & Recreation Center	-	-	-	-	-	-
P20005	Max Road Sports Complex Phase I	294,810	2,267,650	1,344,540	-	-	3,907,000
P20002	Shadow Creek Ranch Park Ph 1	-	611,212	5,178,052	2,588,736	-	8,378,000
P50071	Centennial Park Ph II	-	34,688	1,485,970	542,342	-	2,063,000
P20001	Independence Park Ph 1	-	-	179,810	1,906,803	1,231,387	3,318,000
PK1101	Southgate Park	215,482	-	-	-	-	215,482
PK1102	Cypress Village	110,000	-	-	-	-	110,000
PK1201	Hunter Park	-	602,500	-	-	-	602,500
P20004	Delores Fenwick Nature Center-Ph I	-	-	-	79,020	815,006	894,026
PK1401	PER for Future Bond Referendum	-	-	-	500,000	-	500,000
	TOTAL	**$ 620,292**	**$ 4,241,050**	**$ 8,913,372**	**$ 5,616,901**	**$ 2,771,393**	**$ 22,163,008**

SOURCE OF FUNDS	2011	2012	2013	2014	2015	TOTAL
General Revenue - Cash	-	-	-	-	525,000	525,000
Certificates of Obligation	-	1,012,622	525,000	500,000	-	2,037,622
Future GO Bonds	3,872,016	2,335,161	6,318,073	6,781,117	2,333,512	21,639,879
W/S Revenue Bonds	-	-	-	-	-	-
P.E.D.C.	-	-	-	-	-	-
System Revenues - Cash	-	-	-	-	-	-
Impact Fees - Cash	-	-	-	-	-	-
Impact Fees - Debt	-	-	-	-	-	-
Other Funding Sources	455,776	367,566	276,312	-	200,000	1,299,654
Less Funding Appropriated In Previous Year	(3,707,500)				368,353	(3,339,147)
TOTAL	**$ 620,292**	**$ 3,715,349**	**$ 7,119,385**	**$ 7,281,117**	**$ 3,426,865**	**$ 22,163,008**

Note: The totals do not tie by year as the City anticipates appropriating funds for GO Bond projects in one year and then selling the bonds in the next year.



City of Pearland 2011 - 2015 CIP Parks

- Southgate Park 2011
- Hunter Park 2012
- Max Rd Soccer Complex Ph. I 2011-2013
- Shadow Creek Comm. Park PH. I 2012-2014
- Independence Park Imp. Ph. I 2013-2015
- Centennial Park Ph. II 2012-2014
- Delores Fenwick Nature Center Ph. I 2014-2015
- Cypress Village 2011
- Trail Connectivity 2012, 2013, 2015

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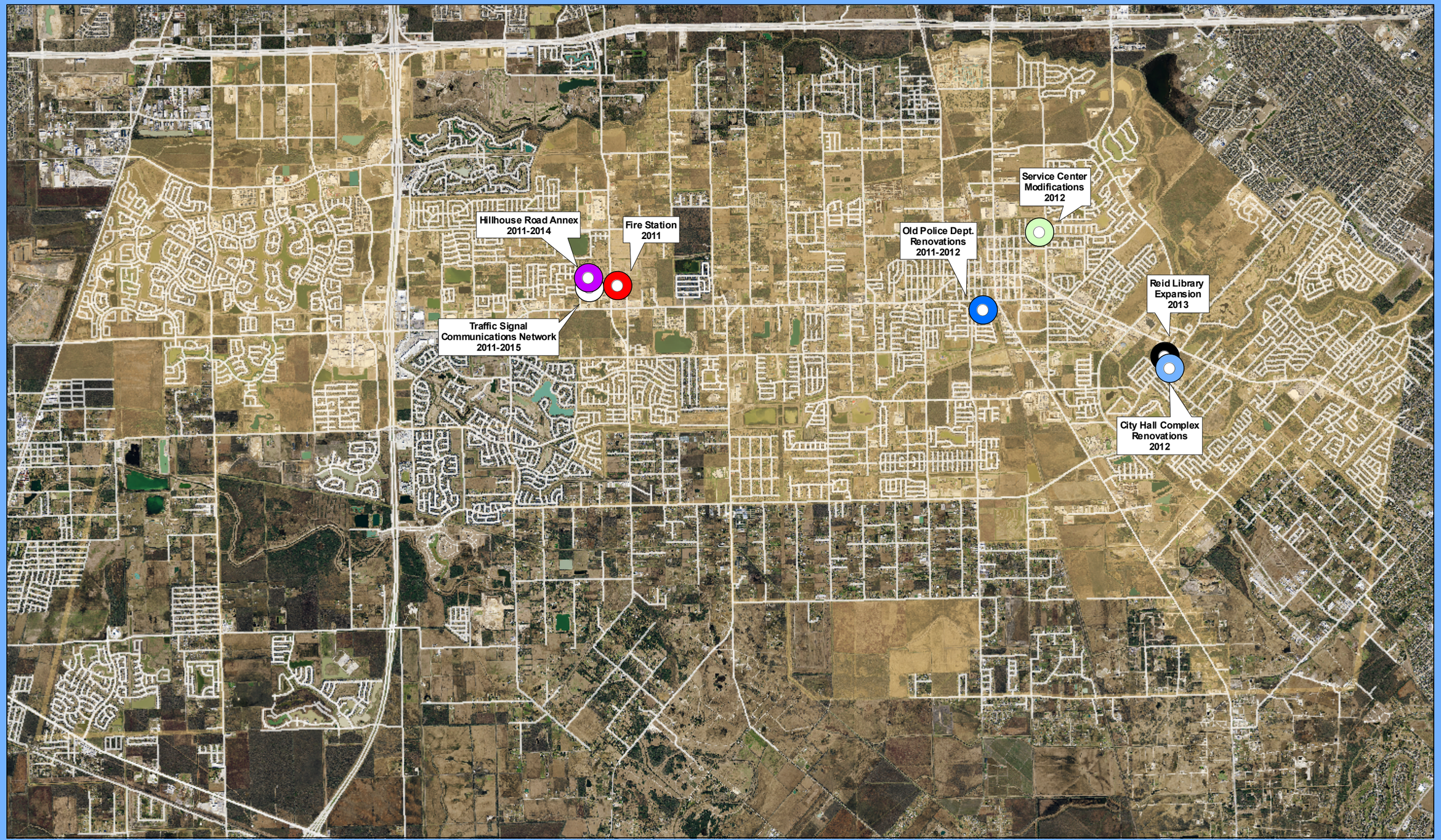
CITY OF PEARLAND
2011 - 2015 CAPITAL IMPROVEMENT PROGRAM
FACILITIES

Project No.	Project Name	2011	2012	2013	2014	2015	TOTAL
FA0902	Savannah Lakes Fire Station #6	-	-	-	-	-	-
FA0905	Old Police Department Renovations*	1,421,988	644,565	-	-	-	2,066,553
FA0904	City Hall Complex Renovations	-	651,000	-	-	-	651,000
T50071	Hillhouse Road Annex	940,201	35,000	250,000	2,750,000	-	3,975,201
FA1101	Fire Station**	1,640,724	-	-	-	-	1,640,724
FA1002	Traffic Signal Communications Network	533,500	250,000	250,000	250,000	250,000	1,533,500
FA1202	West Side Library Store Front	-	550,000	-	-	-	550,000
FA1201	Service Center Modifications	-	35,000	-	-	-	35,000
F20002	Tom Reid Library Expansion	-	-	3,663,400	-	-	3,663,400
	TOTAL	**$ 4,536,413**	**$ 2,165,565**	**$ 4,163,400**	**$ 3,000,000**	**$ 250,000**	**$ 14,115,378**

SOURCE OF FUNDS	2011	2012	2013	2014	2015	TOTAL
General Revenue - Cash	-	70,000	-	-	250,000	320,000
Certificates of Obligation	3,114,425	2,095,565	500,000	3,000,000	-	8,709,990
Future GO Bonds	-	-	882,600	2,780,800	-	3,663,400
W/S Revenue Bonds	-	-	-	-	-	-
P.E.D.C.	-	-	-	-	-	-
System Revenues - Cash	-	-	-	-	-	-
Impact Fees - Cash	-	-	-	-	-	-
Impact Fees - Debt	-	-	-	-	-	-
Other Funding Sources	1,421,988	-	-	-	-	1,421,988
Plus Bonds To Be Sold In Future Year						-
TOTAL	**$ 4,536,413**	**$ 2,165,565**	**$ 1,382,600**	**$ 5,780,800**	**$ 250,000**	**$ 14,115,378**

*** The City will not proceed with the construction of this project until it monitors the effects of the economy on the City's financial picture.**
**** FY2011 contingent upon further review of Fire/EMS study and preliminary engineering reports as to full scope of project.**



City of Pearland 2011 - 2015 CIP Facilities

- City Hall Complex Renovation 2012
- Reid Library Expansion 2013
- Fire Station # 4 2011
- Hillhouse Rd Annex 2011-2014
- Traffic Signal Communications Network 2011-2015
- Old Police Dept Renovations 2011-2012
- Service Center Modifications 2012
- West Side Library Store Front 2012 (Location Not Yet Identified)

N W E S

0 0.5 1 2 Miles

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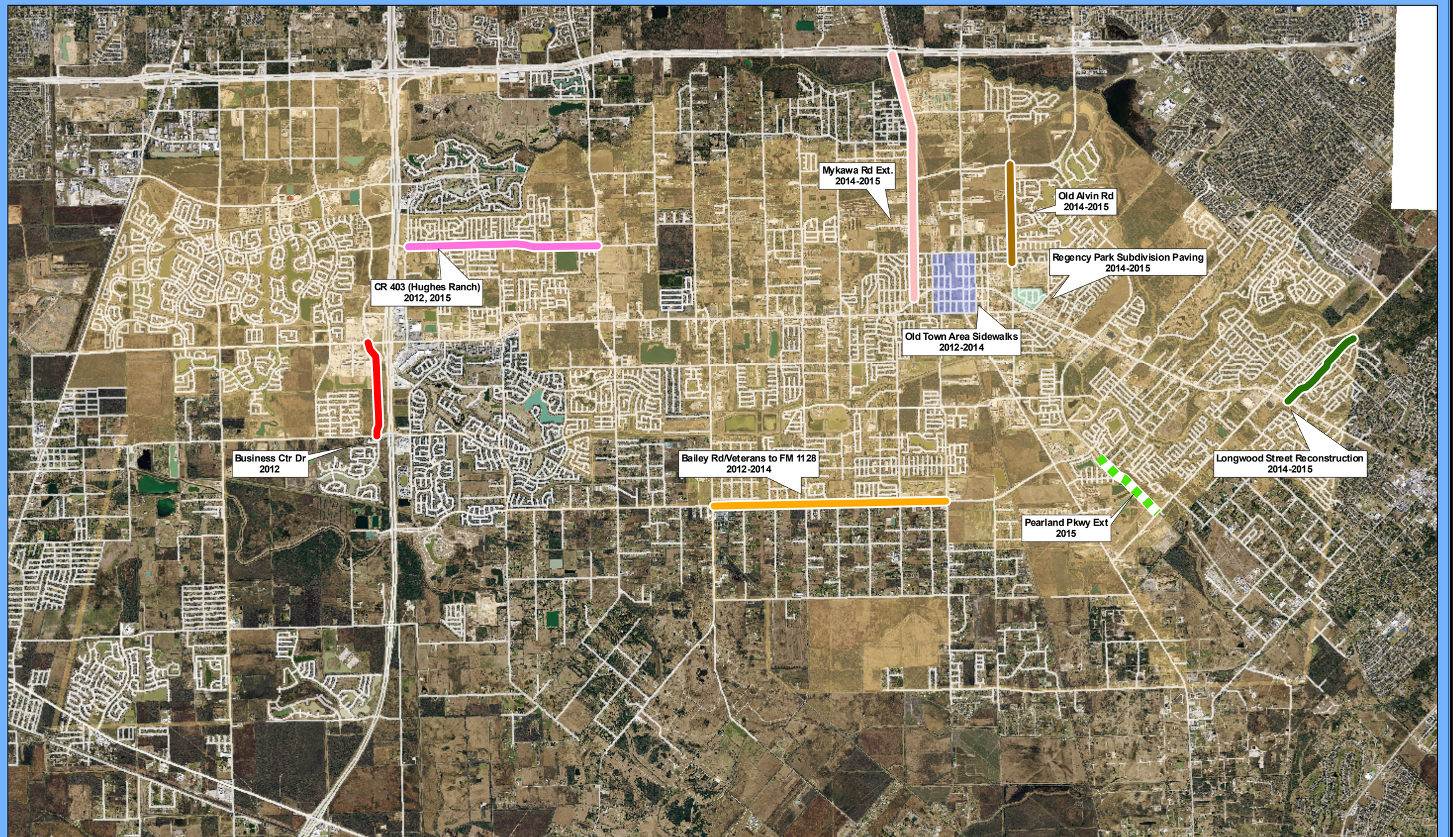
2011 - 2015 CAPITAL IMPROVEMENT PROGRAM
STREETS

Project No.	Project Name	2011	2012	2013	2014	2015	TOTAL
TR0803	Old Town Area Sidewalks	-	200,000	200,000	100,000	-	500,000
T08002	Bailey/Veterans to FM 1128	-	5,000,000	10,632,000	5,818,423	-	21,450,423
TR1201	CR 403 (Hughes Ranch Road)	-	1,065,000	-	-	4,172,600	5,237,600
T68976	Mykawa Road Extension (BW8 to FM 518)	-	-	-	2,592,118	10,377,232	12,969,350
T20002	Old Alvin Rd Widening (Plum Street to McHard Road)	-	-	-	1,094,500	4,950,000	6,044,500
TR1401	PER for Future Bond Referendum	-	-	-	1,500,000	-	1,500,000
TR1501	Pearland Parkway Extension	-	-	-	-	1,400,000	1,400,000
TR1402	Regency Park Subdivision Paving	-	-	-	245,161	2,766,600	3,011,761
TR1403	Longwood Street Reconstruction	-	-	-	991,404	6,017,544	7,008,948
TR0811	Business Center Drive	-	5,602,041	-	-	-	5,602,041
	TOTAL	**$ -**	**$ 11,867,041**	**$ 10,832,000**	**$ 12,341,606**	**$ 29,683,976**	**$ 64,724,623**
	SOURCE OF FUNDS	**2011**	**2012**	**2013**	**2014**	**2015**	**TOTAL**
	General Revenue - Cash	-	200,000	200,000	100,000	-	500,000
	Certificates of Obligation	-	1,065,000	-	2,994,611	4,403,200	8,462,811
	Future GO Bonds	-	5,000,000	10,632,000	8,255,591	17,673,218	41,560,809
	W/S Revenue Bonds	-	-	-	-	-	-
	P.E.D.C.	-	-	-	-	-	-
	System Revenues - Cash	-	-	-	-	-	-
	Impact Fees - Cash	-	-	-	-	-	-
	Unfunded	-	-	-	991,404	6,017,544	7,008,948
	Other Funding Sources	-	5,602,041	-	-	-	5,602,041
	Plus Bonds To Be Sold In Future Year					1,590,014	1,590,014
	TOTAL	**$ -**	**$ 11,867,041**	**$ 10,832,000**	**$ 12,341,606**	**$ 29,683,976**	**$ 64,724,623**

Note: The totals do not tie by year as the City anticipates appropriating funds for GO Bond projects in one year and then selling the bonds in the next year.
No outcome of alignment studies yet budgeted in FY2010



City of Pearland 2011 - 2015 CIP Streets

- Bailey Rd/Veterans to FM 1128 2012-2014
- Longwood Street Reconstruction 2014-2015
- Mykawa Rd Ext. 2014-2015
- CR 403 (Hughes Ranch) 2012, 2015
- Old Alvin Rd 2014-2015
- Pearland Pkwy Ext. 2015
- Business Center 2012
- Old Town Area Sidewalks 2012-2014
- Regency Park Subdivision Paving 2014-2015

N W E S

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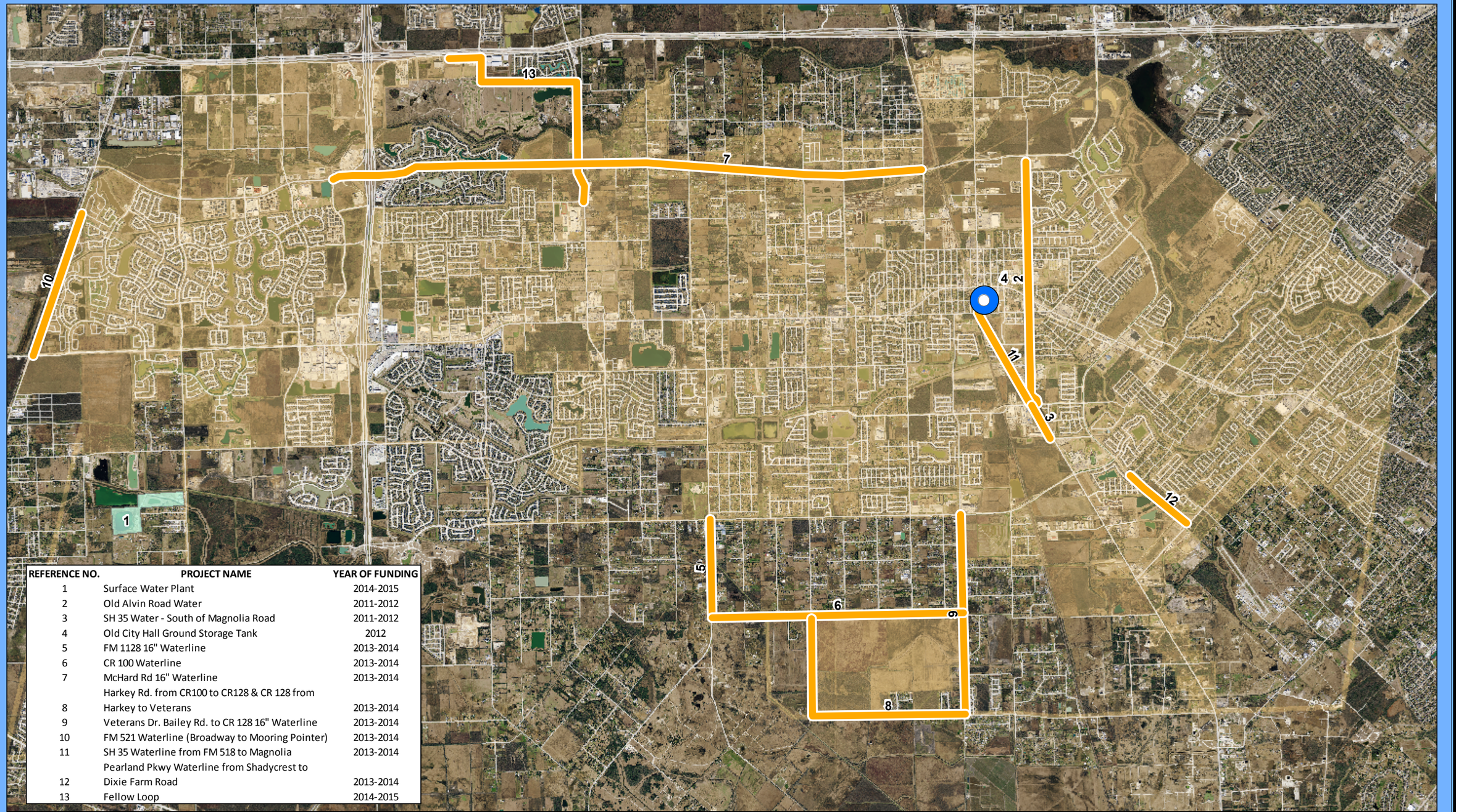
CITY OF PEARLAND
2011 - 2015 CAPITAL IMPROVEMENT PROGRAM
WATER

Project No.	Project Name	2011	2012	2013	2014	2015	TOTAL
WA1001	General Engineering Consultant/CIP Administration	125,000	75,000	75,000	-	-	275,000
WA0812	Surface Water Plant	-	-	-	1,000,000	5,195,000	6,195,000
WA1101	Old Alvin Road Water	446,468	1,900,366	-	-	-	2,346,834
WA1102	SH 35 Water - South of Magnolia Road	78,917	260,019	-	-	-	338,936
WA1201	Old City Hall Ground Storage Tank	-	350,000	-	-	-	350,000
WA1301	FM 1128 16" Waterline	-	-	177,493	584,811	-	762,304
WA1302	CR 100 Waterline	-	-	353,847	1,107,089	-	1,460,936
WA1303	McHard Rd. 16" Waterline.	-	-	1,476,343	4,864,303	-	6,340,646
WA1304	Harkey Rd. from CR100 to CR128 & CR 128 from Harkey to Veterans.	-	-	369,402	965,063	-	1,334,465
WA1305	Veterans Dr. Bailey Rd. to CR 128 16" Waterline	-	-	323,616	966,013	-	1,289,629
WA1307	FM 521 Waterline (Broadway to Mooring Pointer)	-	-	125,178	827,563	-	952,741
WA1308	SH35 Waterline from FM518 to Magnolia	-	-	492,275	1,290,300	-	1,782,575
WA1309	Pearland Parkway Waterline from Shadycrest to Dixie Farm Road	-	-	89,510	747,500	-	837,010
WA1401	Fellows Loop	-	-	-	522,000	2,070,000	2,592,000
	TOTAL	**$ 650,385**	**$ 2,585,385**	**$ 3,482,664**	**$ 12,874,642**	**$ 7,265,000**	**$ 26,858,076**

SOURCE OF FUNDS	2011	2012	2013	2014	2015	TOTAL
General Revenue - Cash	-	-	-	-	-	-
Certificates of Obligation	-	-	-	-	-	-
Future GO Bonds	-	-	-	-	-	-
W/S Revenue Bonds	-	-	-	5,046,641	3,632,500	8,679,141
P.E.D.C.	-	-	-	-	-	-
System Revenues - Cash	262,693	1,081,284	2,008,289	2,328,956	-	5,681,222
Impact Fees - Cash	262,692	130,010	490,067	292,406	500,000	1,675,175
Impact Fees - Debt	-	1,374,091	984,308	4,945,639	2,097,500	9,401,538
Other Funding Sources	125,000	-	-	261,000	1,035,000	1,421,000
Less Funding Appropriated In Previous Year						-
TOTAL	**$ 650,385**	**$ 2,585,385**	**$ 3,482,664**	**$ 12,874,642**	**$ 7,265,000**	**$ 26,858,076**



REFERENCE NO.	PROJECT NAME	YEAR OF FUNDING
1	Surface Water Plant	2014-2015
2	Old Alvin Road Water	2011-2012
3	SH 35 Water - South of Magnolia Road	2011-2012
4	Old City Hall Ground Storage Tank	2012
5	FM 1128 16" Waterline	2013-2014
6	CR 100 Waterline	2013-2014
7	McHard Rd 16" Waterline	2013-2014
8	Harkey Rd. from CR100 to CR128 & CR 128 from Harkey to Veterans	2013-2014
9	Veterans Dr. Bailey Rd. to CR 128 16" Waterline	2013-2014
10	FM 521 Waterline (Broadway to Mooring Pointer)	2013-2014
11	SH 35 Waterline from FM 518 to Magnolia	2013-2014
12	Pearland Pkwy Waterline from Shadycrest to Dixie Farm Road	2013-2014
13	Fellow Loop	2014-2015

City of Pearland 2011 - 2015 CIP Water

- OLD CITY HALL GROUND STORAGE TANK, 2012
- OLD ALVIN RD WATER, 2011-2012
- SH 35 WATER SOUTH OF MAGNOLIA RD, 2011-2012
- CR 100 WATER LINE, 2013-2014
- FM 1128 16IN WATER LINE, 2013-2014
- FM 521 WATERLINE BROADWAY TO MOORING POINTER, 2013-2014
- HARKEY RD FROM CR 100 TO CR 128 TO CR 128, 2013-2014
- MC HARD RD 16 IN WATER LINE, 2013-2014
- FELLOWS LOOP, 2014-2015
- PEARLAND PKWY WATER LINE SHADYCREST TO DFR, 2013-2014
- VETERANS DR BAILEY RD TO CR 128 16IN WATER LINE, 2013-2014
- SH 35 WATER LINE FROM FM 518 TO MAGNOLIA, 2013-2014
- SURFACE WATER PLANT, 2014-2015

N W E S

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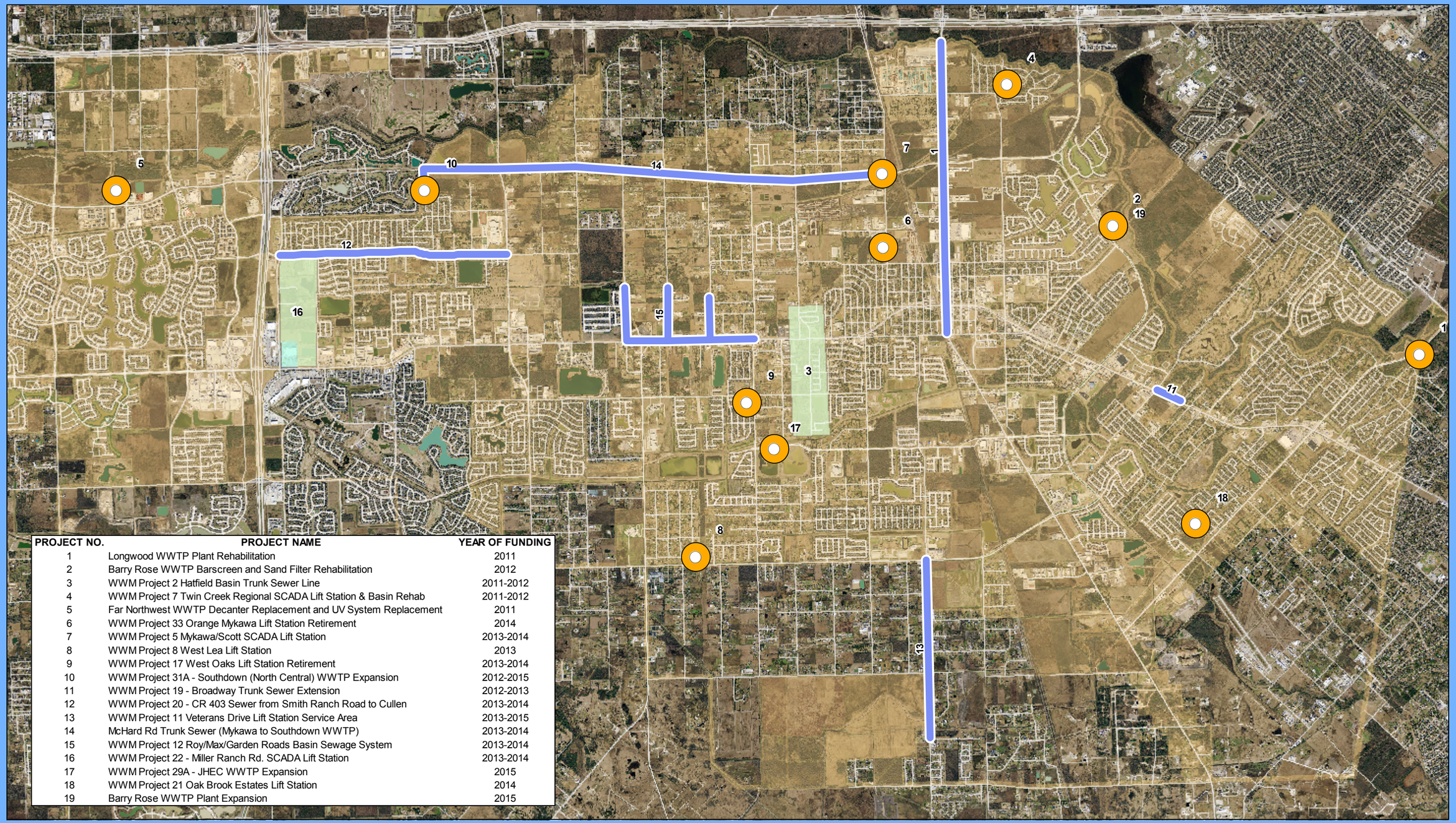
CITY OF PEARLAND
2011 - 2015 CAPITAL IMPROVEMENT PROGRAM
WASTEWATER

Project No.	Project Name	2011	2012	2013	2014	2015	TOTAL
WW0902	Longwood WWTP Plant Rehabilitation	2,769,140	-	-	-	-	2,769,140
WW1004	Barry Rose WWTP Barscreen and Sand Filter Rehabilitation	-	2,830,000	-	-	-	2,830,000
WW1103	WWM Project 2 Hatfield Basin Trunk Sewer Line	774,000	3,860,000	-	-	-	4,634,000
WW1101	WWM Project 7 Twin Creek Regional SCADA Lift Station & Basin Rehab	511,198	2,007,802	-	-	-	2,519,000
WW1102	Far Northwest WWTP Decanter Replacement and UV System Replacement	1,250,000	-	-	-	-	1,250,000
WW1402	WWM Project 33 Orange Mykawa Lift Station Retirement	-	-	-	601,183	-	601,183
WW1306	WWM Project 5 Mykawa/Scott SCADA Lift Station	-	-	516,783	2,227,217	-	2,744,000
WW1307	WWM Project 8 West Lea Lift Station	-	-	122,341	-	-	122,341
WW1308	WWM Project 17 West Oaks Lift Station Retirement	-	-	33,523	130,383	-	163,906
WW1201	WWM Project 31A - Southdown (North Central) WWTP Expansion	-	500,000	1,307,220	4,158,942	4,158,942	10,125,104
WW1202	WWM Project 19 - Broadway Trunk Sewer Extension	-	18,008	136,992	-	-	155,000
WW1305	WWM Project 20 - CR 403 Sewer from Smith Ranch Road to Cullen	-	-	245,000	1,644,500	-	1,889,500
WW1301	WWM Project 11 Veterans Drive Lift Station Service Area	-	-	257,669	753,000	5,415,611	6,426,280
WW1303	McHard Rd Trunk Sewer (Mykawa to Southdown WWTP)	-	-	1,903,296	9,299,410	-	11,202,706
WW1302	WWM Project 12 Roy/Max/Garden Roads Basin Sewage System	-	-	411,475	1,627,816	-	2,039,291
WW1304	WWM Project 22 - Miller Ranch Rd. SCADA Lift Station	-	-	213,128	519,800	-	732,928
WW1501	WWM Project 29A - JHEC WWTP Expansion	-	-	-	-	1,017,350	1,017,350
WW1401	WWM Project 21 Oak Brook Estates Lift Station	-	-	-	232,900	-	232,900
WW1502	Barry Rose WWTP Plant Expansion	-	-	-	-	450,000	450,000
	TOTAL	**$ 5,304,338**	**$ 9,215,810**	**$ 5,147,427**	**$ 21,195,151**	**$ 11,041,903**	**$ 51,904,629**

CITY OF PEARLAND
2011 - 2015 CAPITAL IMPROVEMENT PROGRAM
WASTEWATER

SOURCE OF FUNDS	2011	2012	2013	2014	2015	TOTAL
General Revenue - Cash	-	-	-	-	-	-
Certificates of Obligation	-	-	-	-	-	-
Future GO Bonds	-	-	-	-	-	-
W/S Revenue Bonds	2,536,338	6,340,998	1,199,695	17,899,547	6,597,857	34,574,435
P.E.D.C.	-	-	-	-	-	-
System Revenues - Cash	3,000,000	2,318,008	833,451	256,809	2,000,000	8,408,268
Impact Fees - Cash	-	500,000	200,000	636,310	2,444,046	3,780,356
Impact Fees - Debt	-	-	1,414,281	902,485	-	2,316,766
Other Funding Sources	2,664,000	-	1,500,000	1,500,000	-	5,664,000
Less Funding Appropriated In Previous Year						(2,839,196)
TOTAL	**$ 8,200,338**	**$ 9,159,006**	**$ 5,147,427**	**$ 21,195,151**	**$ 11,041,903**	**$ 51,904,629**



PROJECT NO.	PROJECT NAME	YEAR OF FUNDING
1	Longwood WWTP Plant Rehabilitation	2011
2	Barry Rose WWTP Barscreen and Sand Filter Rehabilitation	2012
3	WWM Project 2 Hatfield Basin Trunk Sewer Line	2011-2012
4	WWM Project 7 Twin Creek Regional SCADA Lift Station & Basin Rehab	2011-2012
5	Far Northwest WWTP Decanter Replacement and UV System Replacement	2011
6	WWM Project 33 Orange Mykawa Lift Station Retirement	2014
7	WWM Project 5 Mykawa/Scott SCADA Lift Station	2013-2014
8	WWM Project 8 West Lea Lift Station	2013
9	WWM Project 17 West Oaks Lift Station Retirement	2013-2014
10	WWM Project 31A - Southdown (North Central) WWTP Expansion	2012-2015
11	WWM Project 19 - Broadway Trunk Sewer Extension	2012-2013
12	WWM Project 20 - CR 403 Sewer from Smith Ranch Road to Cullen	2013-2014
13	WWM Project 11 Veterans Drive Lift Station Service Area	2013-2015
14	McHard Rd Trunk Sewer (Mykawa to Southdown WWTP)	2013-2014
15	WWM Project 12 Roy/Max/Garden Roads Basin Sewage System	2013-2014
16	WWM Project 22 - Miller Ranch Rd. SCADA Lift Station	2013-2014
17	WWM Project 29A - JHEC WWTP Expansion	2015
18	WWM Project 21 Oak Brook Estates Lift Station	2014
19	Barry Rose WWTP Plant Expansion	2015

City of Pearland 2011 - 2015 CIP Wastewater

- BARRY ROSE WWTP BARSCREEN & SAND FILTER REHAB 2012
- LONGWOOD WWTP LIFT STATION AND PLANT, 2011
- WEST LEA LIFT STATION, 2013
- WEST OAKS LIFT STATION RETIREMENT, 2013-2014
- FAR NORTHWEST WWTP DECANTER & UV SYSTEM REPLACEMENT, 2011
- ORANGE MYKAWA LIFT STATION RETIREMENT, 2014
- BARRY ROSE WWTP PLANT EXPANSION 2015
- TWIN CREEK REGIONAL SCADA LIFT STATION AND BASIN, 2011-2012
- MYKAWA AT SCOTT SCADA LIFT STATION, 2013-2014
- SOUTHDOWN NC WWTP EXPANSION, 2012-2015
- JHEC WWTP EXPANSION, 2015
- WWM PROJECT 21 OAK BROOK ESTATES LIFT STATION, 2014
- CR 403 SEWER FROM SMITH RANCH ROAD TO CULLEN 2013-2014
- BROADWAY TRUNK SEWER EXTENTION, 2012-2013
- MC HARD RD TRUNK SEWER MYKAWA AT SCOTT WWTP, 2013-2014
- ROY MAX GARDEN RDS BASIN SEWAGE SYSTEM, 2013-2014
- VETERANS DR LIFT STATION SERVICE AREA, 2013-2015
- HATFIELD BASIN TRUNK SEWER LINE, 2011-2012
- WWM PROJECT MILLER RANCH RD SCADA LIFT STATION, 2013-2014

N W E S

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GIS

WORKSHOP

3

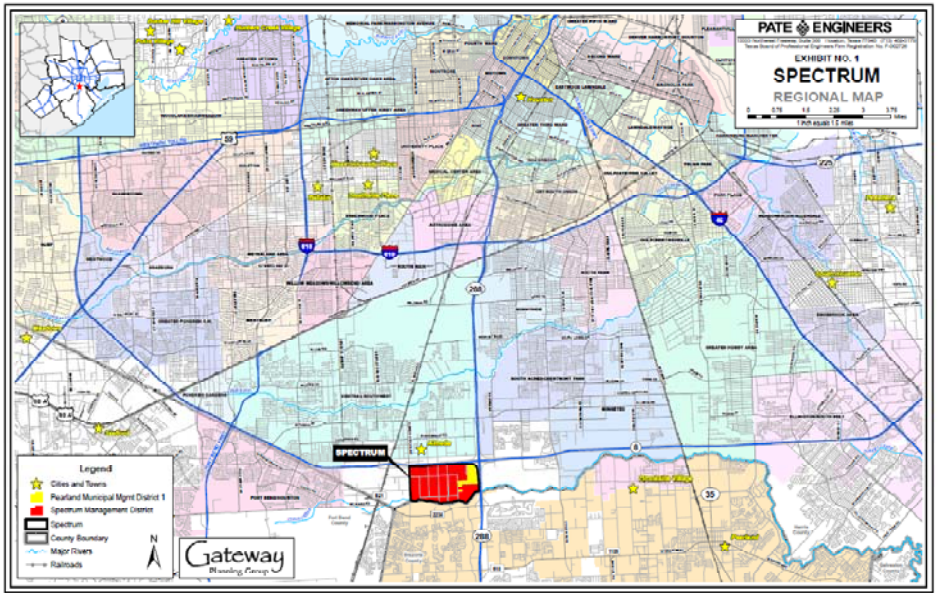
The Spectrum Initiative

City Council Worksession

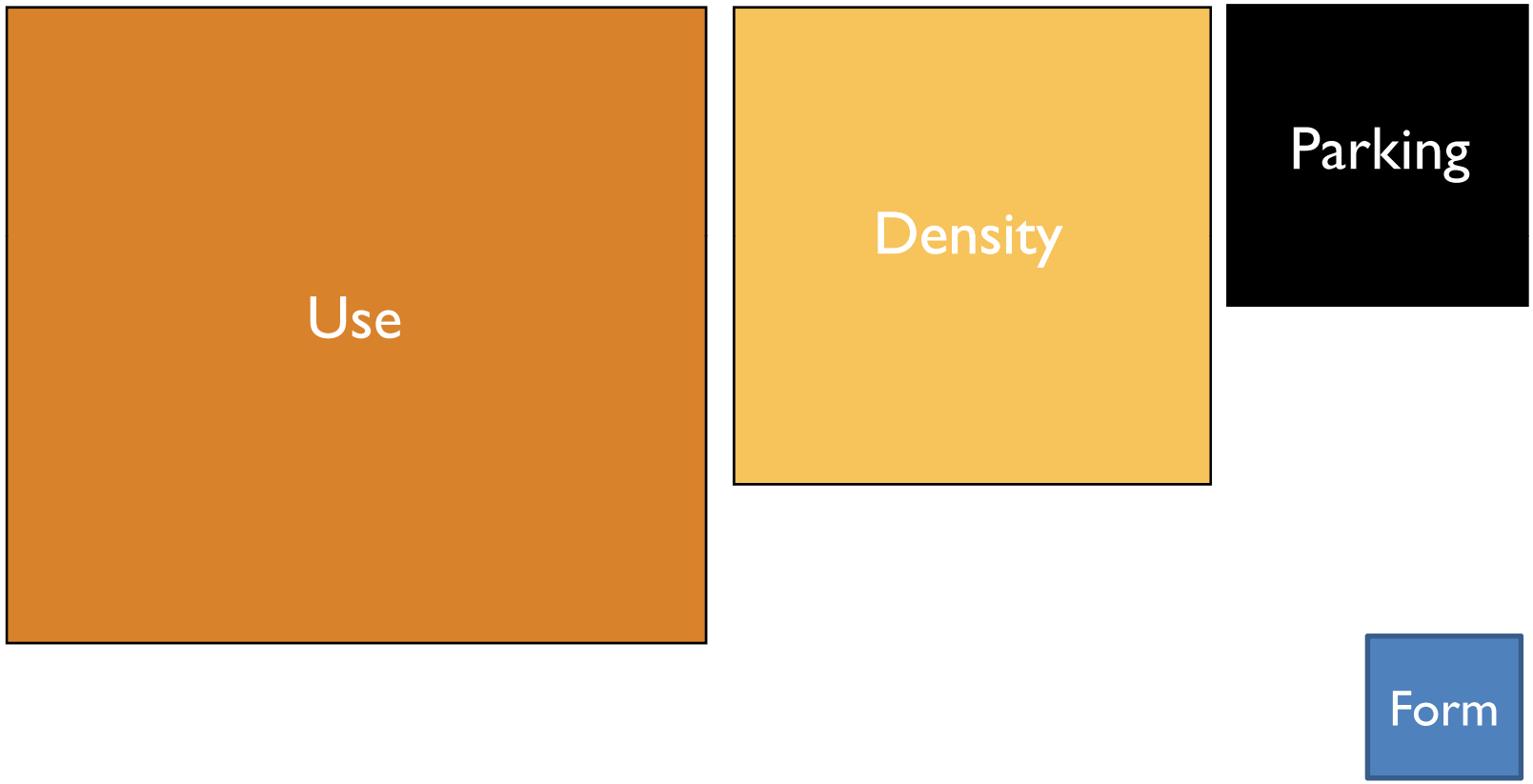
November 24, 2010

The Initiative

- Leveraging regional location
- Building on prior investments
- Creating a unified identity
- Infrastructure investment plan
- Creating competitive advantage



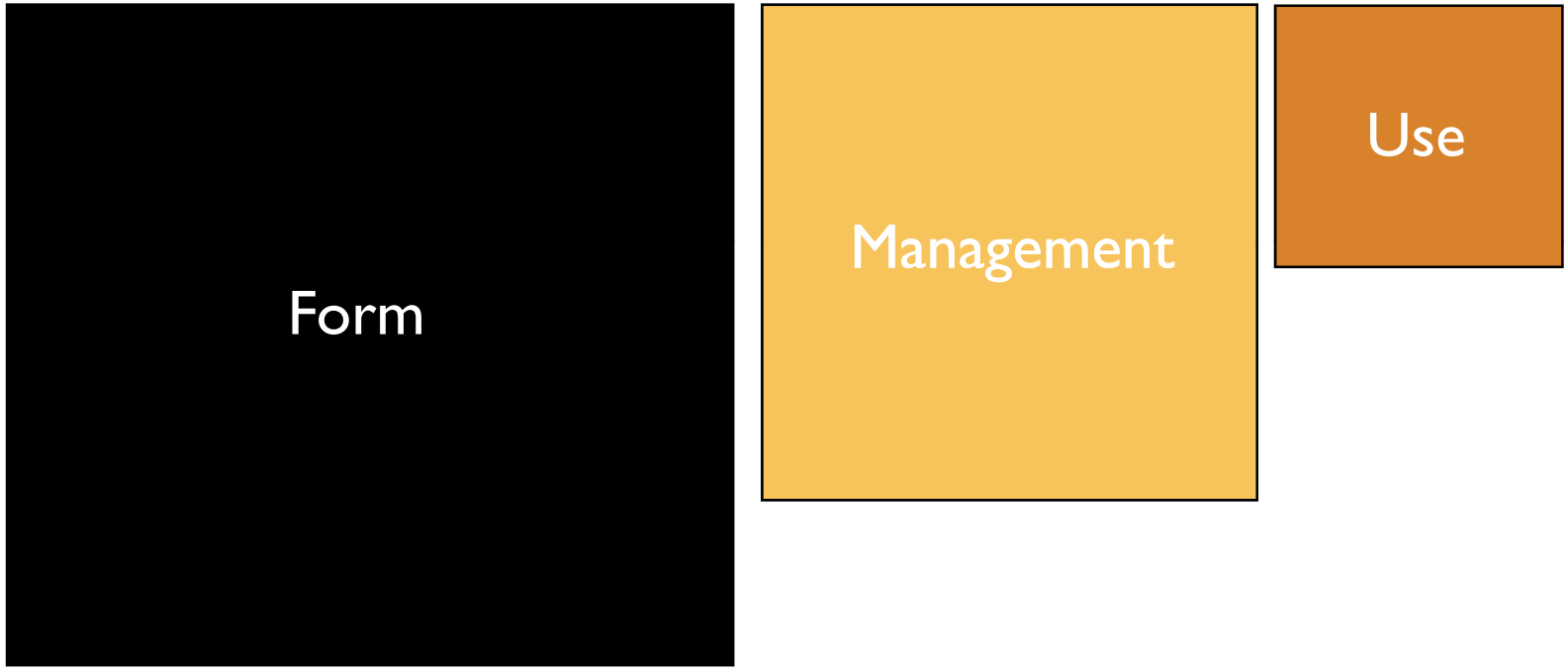
Today's Approach to Zoning



Products of Conventional Zoning

- Single use pods of development
- Buffers instead of transitions
- Lack of a transportation network
- Not pedestrian-friendly, not transit-friendly
- Narrowly stratified market
- Planned obsolescence, so constructed accordingly
- Scrape, rezone and sometimes re-subdivide to redevelop
- Value drops when the intended use no longer viable

Form-Based Approach to Zoning



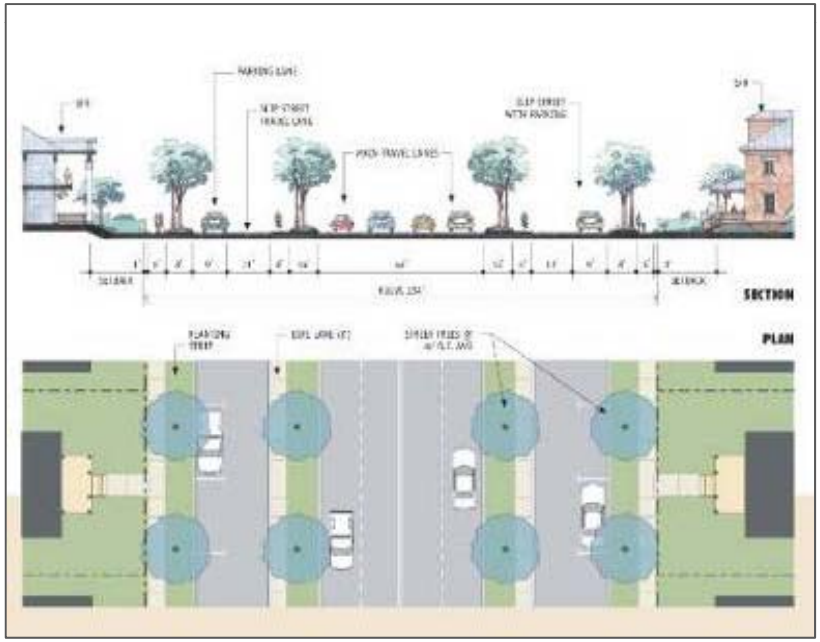
Definition

Form-based codes foster predictable built results and a high-quality public realm by using physical form (rather than separation of uses) as the organizing principle for the code. These codes are adopted into city or county law as regulations, not mere guidelines. Form-based codes are an alternative to conventional zoning.

www.formbasedcodes.org

Definition

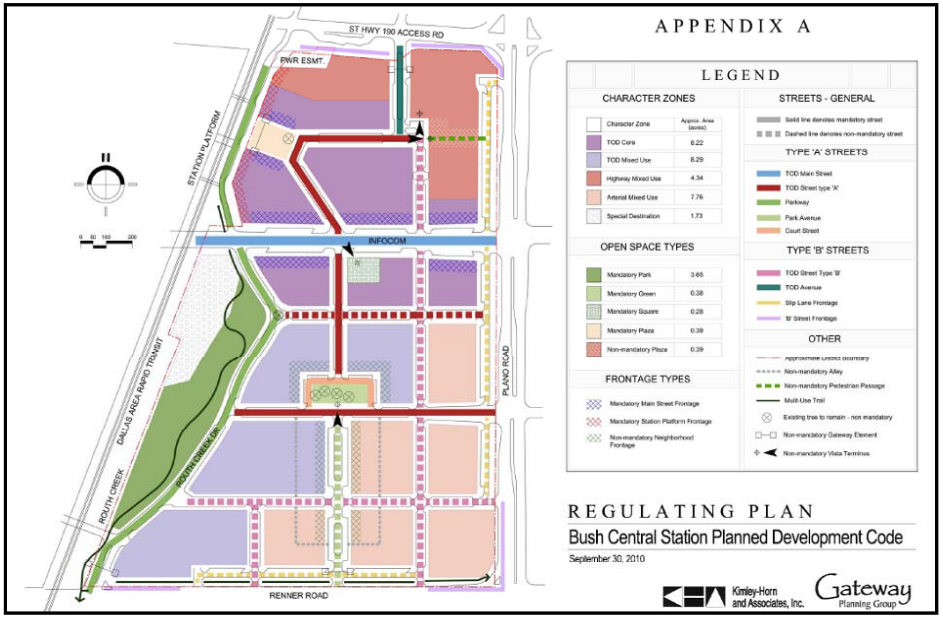
Form-based codes address the relationship between building facades and the public realm, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks.



www.formbasedcodes.org

Definition

The regulations and standards in Form-based codes, presented in both diagrams and words, are keyed to a *regulating plan* that designates the appropriate form and scale (and therefore, character) of development rather than only distinctions in land-use types.

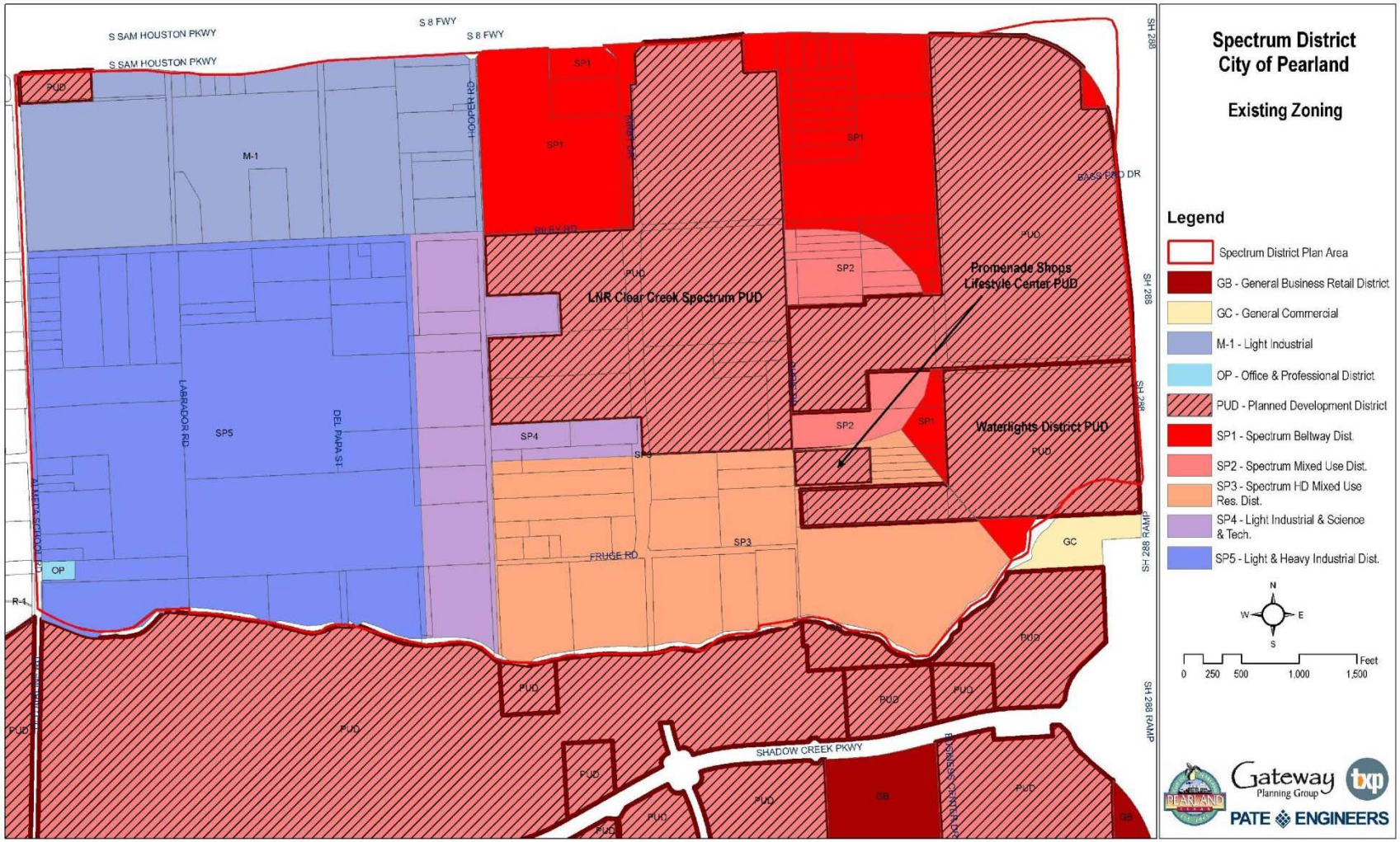


www.formbasedcodes.org

Products of Form-Based Zoning

- Transitions instead of buffers
- A network of transportation, encouraging choice
- Broad market (families, empty-nesters, young professionals etc.)
- Planned to endure
- Change of use often times instead of redeveloping
- Value holds when the current use is no longer viable

Spectrum District - Existing Zoning



Gateway Planning Group

PATE ENGINEERS

Issues with Existing Zoning

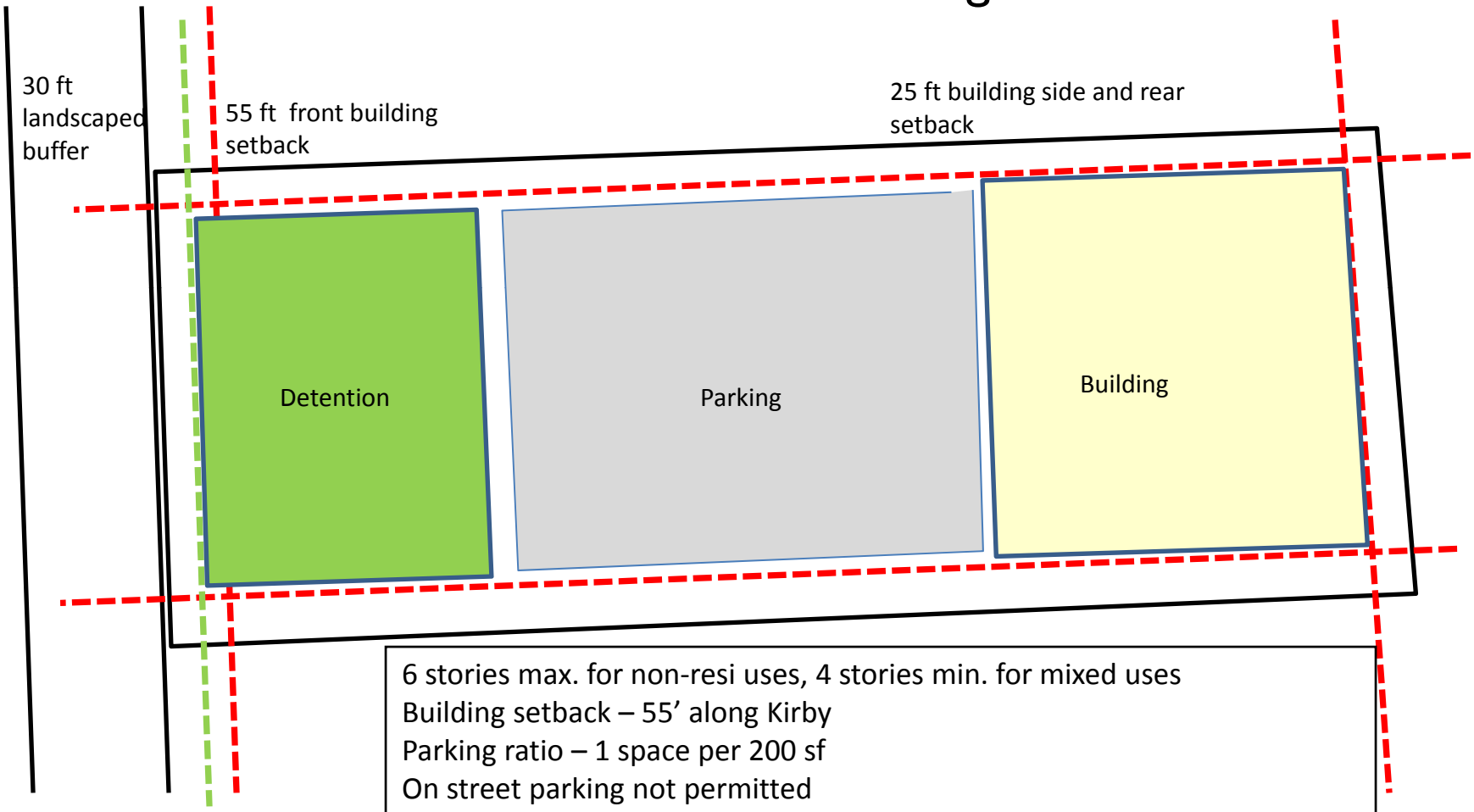
- Development standards are uniform across all existing Spectrum subdistricts and do not implement the vision for walkable mixed use development.
- The Waterlights PUD standards are conceptual and do not include any specific development standards.
- Architectural standards and guidelines are uniform across all existing Spectrum Zoning Districts (from Industrial to Mixed Use) and this will need to be revised to implement specific public realm conditions.
- Current entitlement does not provide property owners with any predictability of development outcomes on their property or on adjacent properties.
- This is especially problematic for the city and the MMD's to evaluate the total value of the built environment that can then be allocated to prioritizing public infrastructure.

Issues with current zoning standards

- Example - Existing standards do not result in a predictable built environment. For example, buildings may be built to the street (0' minimum setback required), but are not <u>required</u> to be built to the street

Spectrum District – Current UDC Requirements

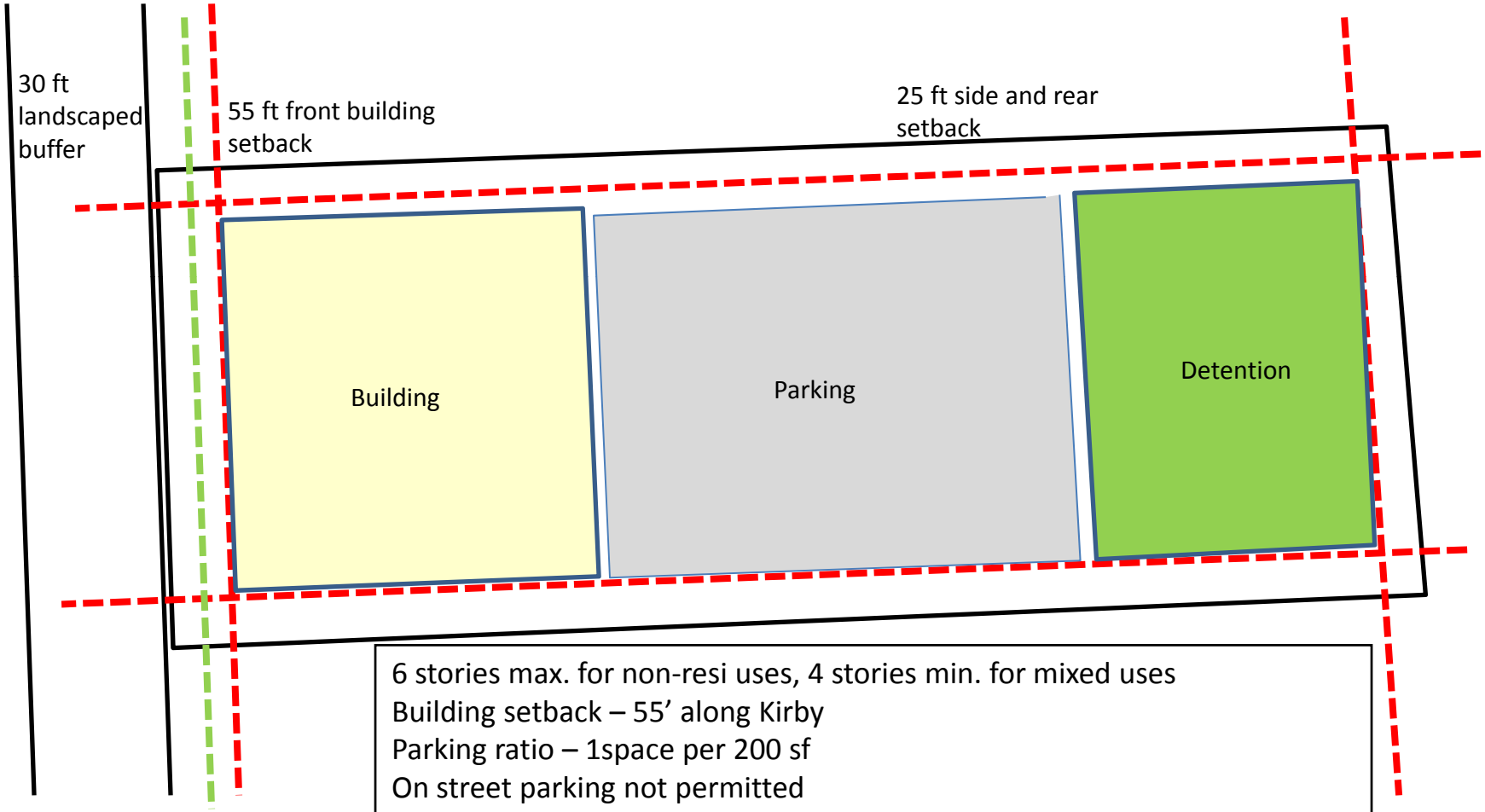
Scenario 1: Detention along street



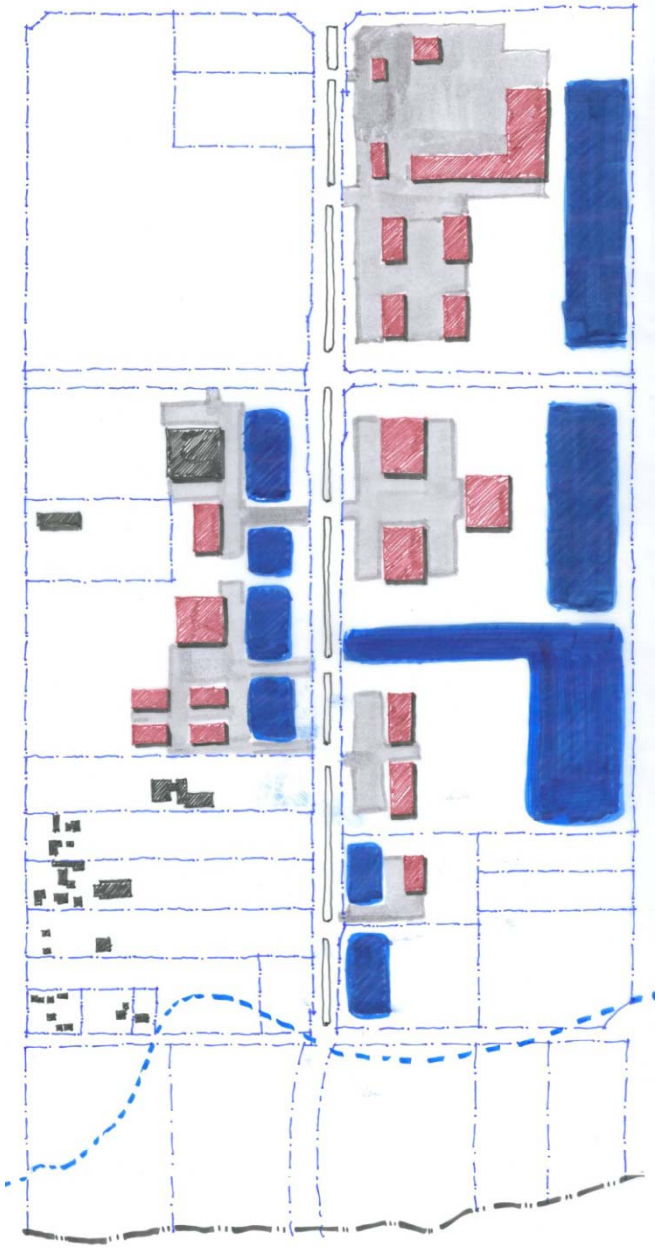
6 stories max. for non-resi uses, 4 stories min. for mixed uses
Building setback – 55' along Kirby
Parking ratio – 1 space per 200 sf
On street parking not permitted
Ground floor commercial, upper floors office, lodging, residential

Spectrum District – Current UDC Requirements

Scenario 2: Building along the street



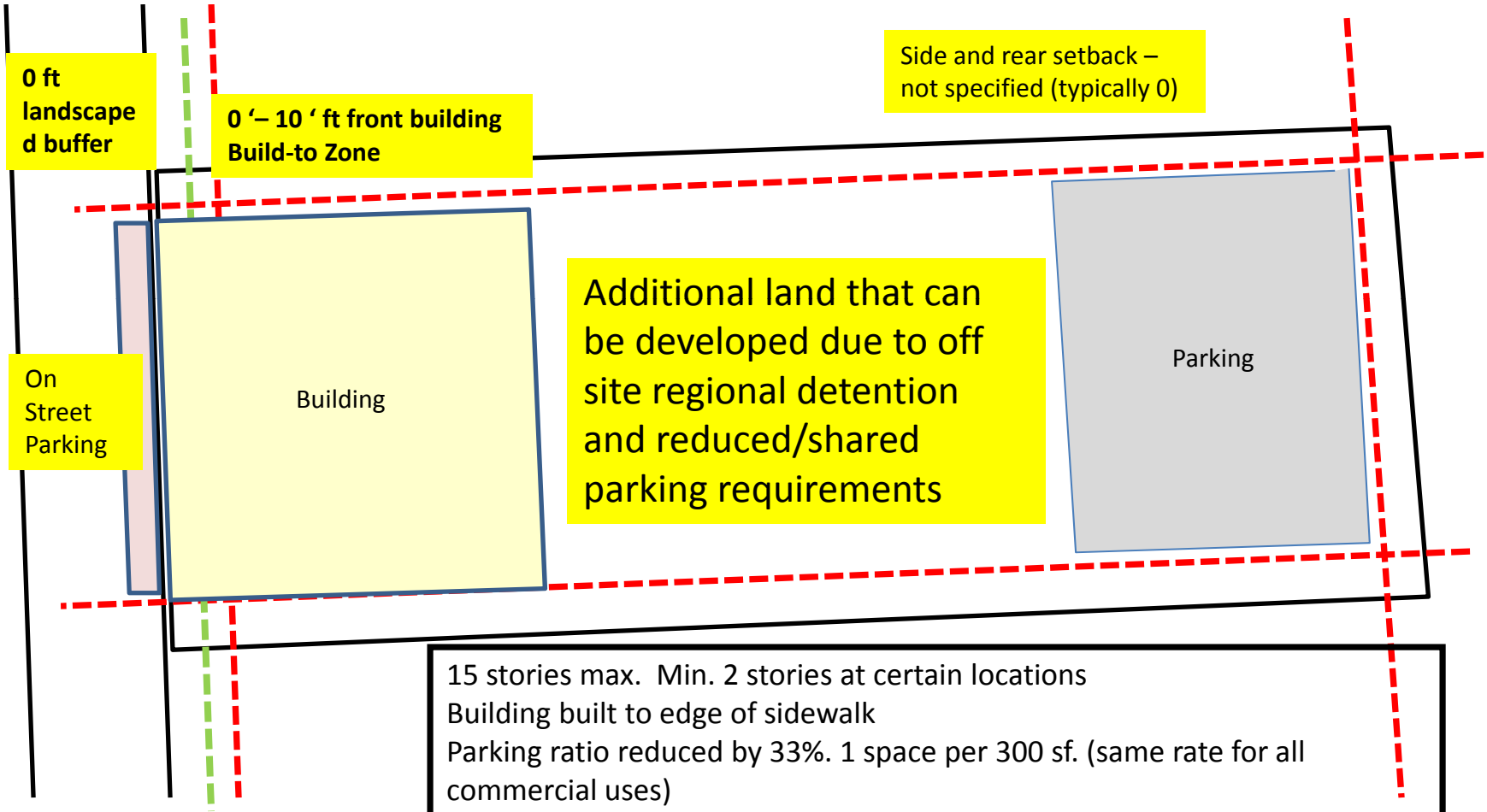
6 stories max. for non-resi uses, 4 stories min. for mixed uses
Building setback – 55' along Kirby
Parking ratio – 1space per 200 sf
On street parking not permitted
Ground floor commercial, upper floors office, lodging, residential



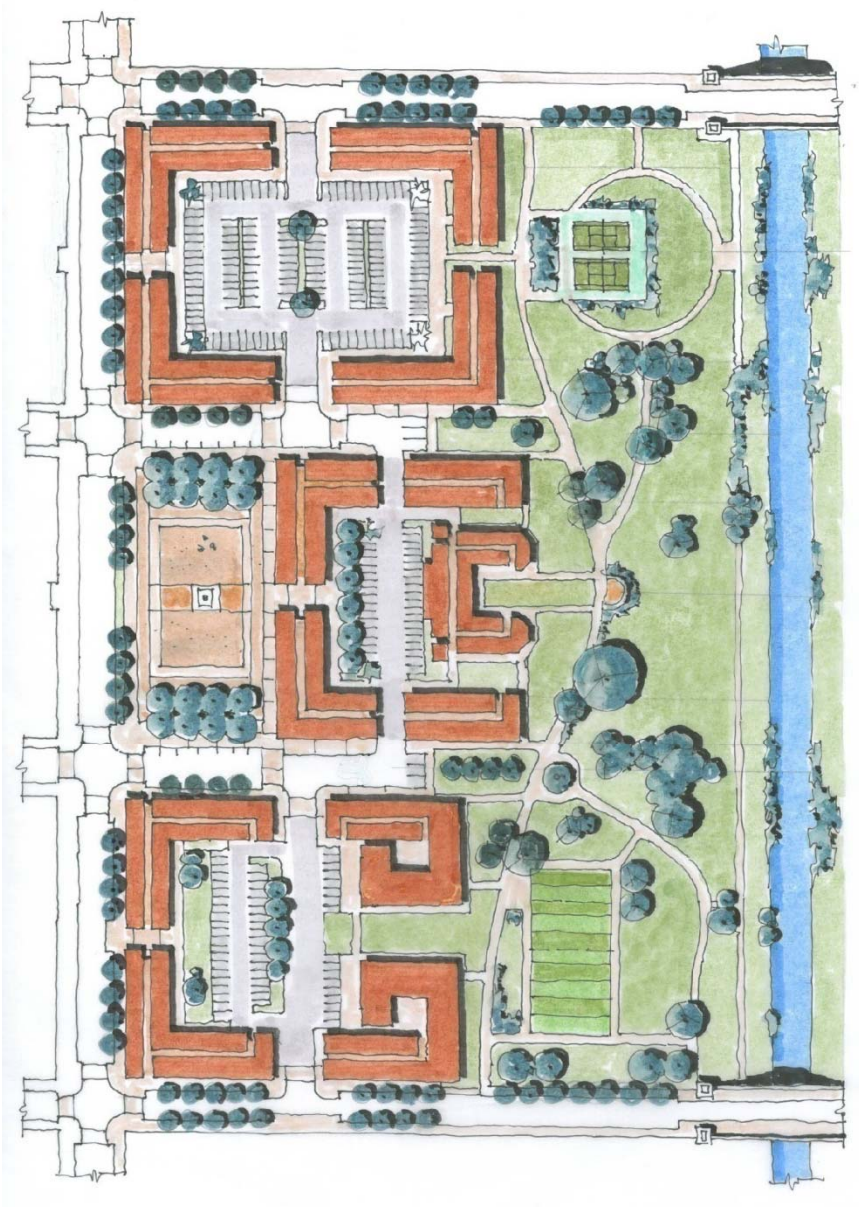
Likely Spectrum development scenario under current conditions (existing zoning and individual site drainage detention)

Spectrum District – Proposed Form-Based Code

Proposed Standards – Mixed Use Core



15 stories max. Min. 2 stories at certain locations
Building built to edge of sidewalk
Parking ratio reduced by 33%. 1 space per 300 sf. (same rate for all commercial uses)
Allows on street parking
Ground floor commercial, upper floors office, lodging, residential



Likely Spectrum development scenario under form-based zoning

Gateway Planning Group

txp

PATE ENGINEERS

Potential development in the Spectrum District
under a Form-Based Code

Development Regulations – Key Differences

- Conventional Zoning
  - Use-based
  - Segregation of land uses by Districts
  - Control of development intensity
    - Floor Area Ratio (FAR)
    - Setbacks
    - Parking Ratios
    - Traffic Level of Service

- Form-Based Code
  - Emphasize the appearance and qualities of the Public Realm (streetscape)
  - Focus on the visual aspect of the development
    - Building Height and Mass
    - Façade Treatments
    - Location of Parking
    - Relation of the Building to the Street

Why A Form Base Code for Spectrum?

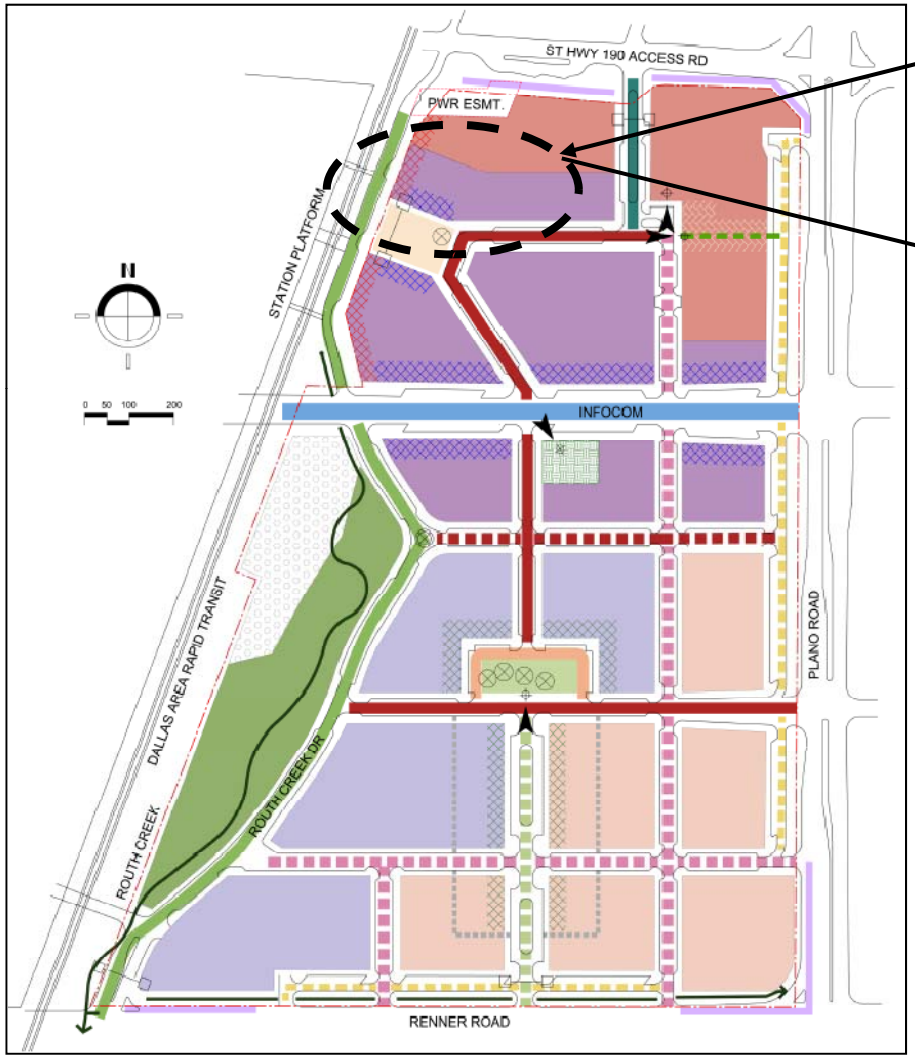
- Achieves a predictable community vision
  - Code is regulatory, not advisory
  - Achieves a predicable physical result
- Concentrates on the visual aspect of the development through:
  - Building Height
  - Façade Treatment
  - Parking Location
  - Relationship of the building to the street (pedestrian friendly)
- Can regulate development at the scale of an individual building or lot, with a communally agreed upon vision and framework; thus
  - Encourages independent development by multiple property owners
- Encourages compact, walkable urbanism
- Provides the community with the opportunity to respond to changing market demand in a predictable manner

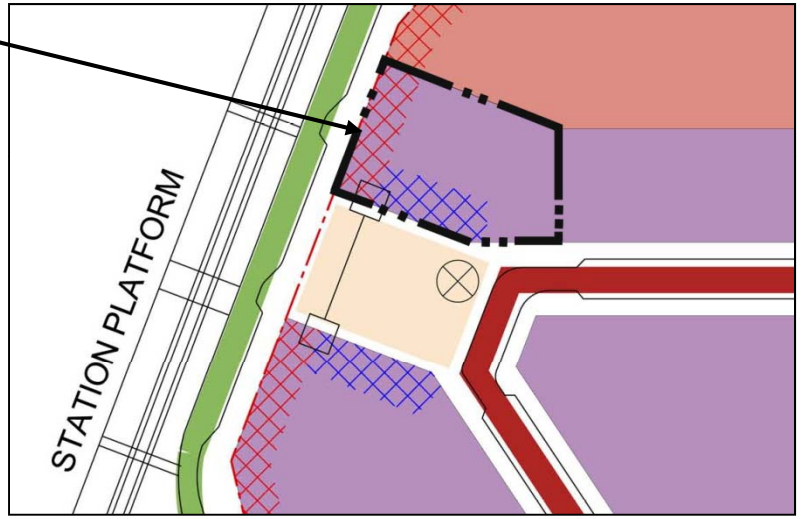
Using a Form-Based Code - Example

- Locate the property on the Regulating Plan (Zoning Map)
- Identify
  - Character Zone
  - Street Type
  - Special Frontage Standards
- Review the Schedule of Uses by Character Zone
- Examine the Building Form and Development Standards
- Refer to Building Design Standards
- Refer to Street Type and Streetscape Standards

Using the Code

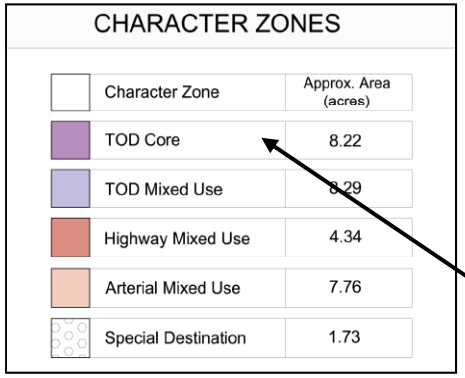
- Locate the property on the Regulating Plan





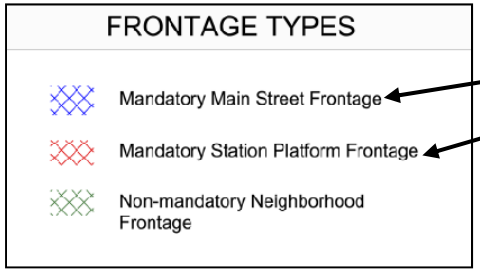
Using the Code

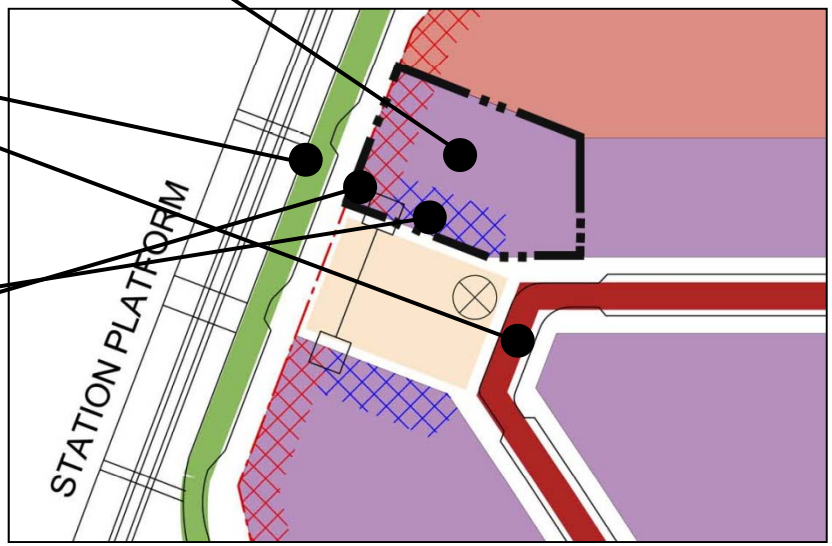
- Identify
  - Character Zone
    - TOD Core
  - Street Type
    - TOD Street Type 'A'
    - Parkway
  - Special Frontage
    - Mandatory Main Street
    - Mandatory Station Platform



CHARACTER ZONES

Character Zone	Approx. Area (acres)
TOD Core	8.22
TOD Mixed Use	8.29
Highway Mixed Use	4.34
Arterial Mixed Use	7.76
Special Destination	1.73





Using the Code

- Review the Schedule of Uses by Character Zone

Section 6. Schedule of Permitted Uses

6.1 Generally: Due to the emphasis on urban form over land uses in the Station Areas, general use categories have been identified by character zones. Uses not listed in the following schedule, but are substantially similar, may be permitted upon the approval of the City Manager or designee, subject to appeal to the City Council.

6.2 Schedule of Uses:

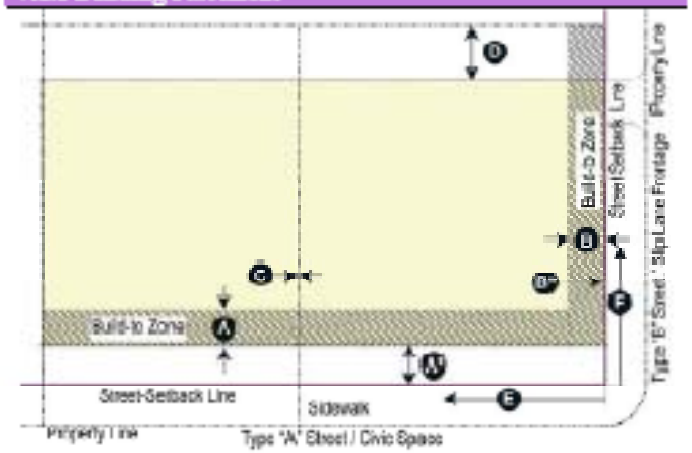
Table 6.1

Character Zone	TOD Core	TOD Mixed Use	Arterial Mixed Use & Highway Mixed Use	Special Destination
Land Use				
Commercial Uses (Office, Retail, Sales & Service Uses)				
Retail Sales or Service with no drive through facility (includes alcohol sales). Excluded from this category are Auto-Retail Sales and Service Uses (see Section 4 of the Code for Definition of Retail, Service uses, and Auto-related Sales and Service)	P	P	P	P/A
Finance, Insurance, and Real Estate establishments including banks, credit unions, real estate, and property management services, with no drive through facility	P	P	P	NP

Using the Code

- Examine the Building Form and Development Standards

7.1.1 Building Placement



Legend

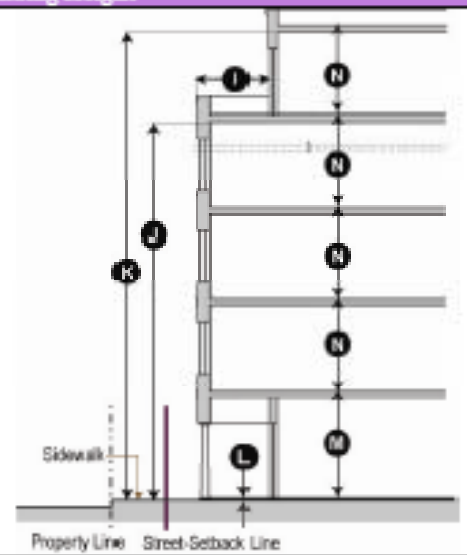
Property Line — Setback Line — Street-Setback Line

Building Area — Build-to Zone

Street-Setback Line (SSL) (Distance from center line of street to edge of the BTZ)	
TOD Main Street	61 feet
TOD Street Type A	35 feet
TOD Street Type B	31 feet
TOD Avenue	44 feet
Parkway	36 feet
Plano Road Slip Road Frontage	85 feet (measured from the R.O.W of Plano Road)

Build-To Zone (BTZ) (Distance from edge of SSL to edge of the BTZ)		
Front (Type 'A' Street and Civic Space)	5 – 10 feet	A

7.1.3 Building Height



Principal Building Standards		
Building maximum	20 stories (see #6 and #9)	K
First floor to floor height	15 feet (min.) (see #5)	M
Ground floor finish level	12 inches max. above sidewalk (for ground floor Retail Ready buildings)	L
Upper floor(s) height (floor-to-floor)	10 feet min.	N
Stepback height	Maximum 6 stories then stepback (see #14)	J
Stepback distance	10 feet min.	I

Using the Code

- Refer to Building Design Standards

Section 8. Building Design Standards

The Building D
urban character
reviewed by the

The key design
the preservation
and designed so
design principle

a. New buildi
realm.
b. Compatibili
building ele
c. Building fa
interest.
d. Open space(

8.1 General to a

iii. Parking structure facades on all Type 'A' Streets shall be designed with both vertical (façade rhythm of 20 feet to 30 feet) and horizontal (aligning with horizontal elements along the block) articulation.
iv. Where above ground structured parking is located at the perimeter of a building with frontage along a Type 'A' Street; it shall be screened in such a way that cars on all parking levels are completely hidden from view from all adjacent public streets . Parking garage ramps shall not be visible from any public street. Ideally, ramps should not be located along the perimeter of the parking structure. Architectural screens shall be used to articulate the façade, hide parked vehicles, and shield lighting.
v. When parking structures are located at corners, corner architectural elements shall be incorporated such as corner entrance, signage and glazing.
vi. Parking structures and adjacent sidewalks shall be designed so pedestrians are clearly visible to entering and exiting automobiles.

Images showing appropriate design of Parking Structures

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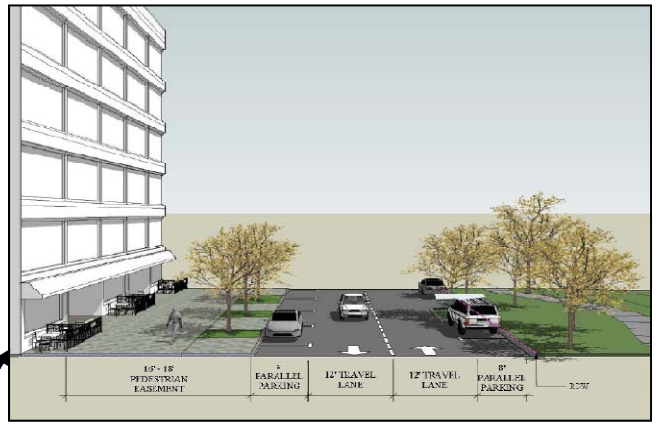
Using the Code

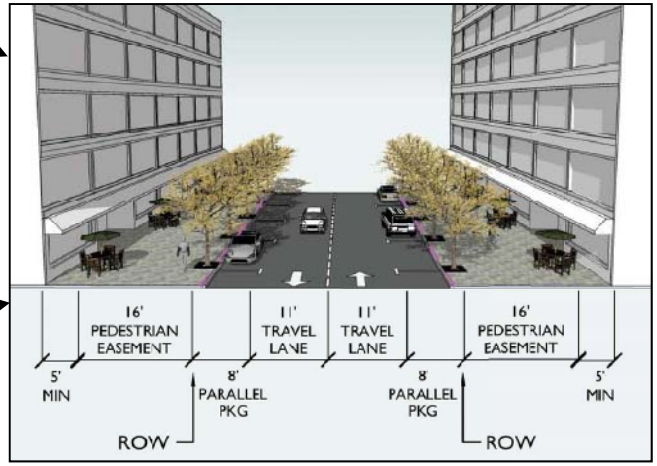
- Refer to Street Type and Streetscape Standards



Parkway

Table 9.1

Elements / Street Type	Street Width (Recommended minimum)		Number of Vehicular Lanes	Number of Bike Lanes	Vehicular Lane Widths	Bike Lane Width	On-Street Parking	Pedestrian Sidewalk Width (min.)	Parkway Tree Well
	R.O.W	Pedestrian Easement (on both sides)							
TOD Main Street	90 feet	16 feet	4	2	10.5 feet	5 feet	Yes, both sides, reverse angled	16 feet	Tree Well, 5 X 5 feet min.
Parkway	40 feet	16-18 feet	2	N/A	12 feet	N/A	Yes, both sides, parallel	16-18 feet	Tree Well, 5X5 feet
TOD Avenue	64 feet	12 feet	2	N/A	14 feet	N/A	Yes, both sides, parallel	12 feet	Tree Well, 5 X 5 feet min.
Park Avenue	74 feet	14 feet	2	N/A	14 feet	N/A	Yes, both sides, parallel	8 feet	Tree Well, 5 x 5 feet min. or Parkway, 6 feet min.
TOD Street Type 'A'	38 feet	16 feet	2	N/A	11 feet	N/A	Yes, both sides, parallel	16 feet	Tree Well, 5 X 5 feet min.
TOD Street Type 'B'	38 feet	12 feet	2	N/A	11 feet	N/A	Yes, both sides, parallel	12 feet	Tree Well, 5 X 5 feet min.
Court Street	20 feet	16 feet	1	N/A	12 feet	N/A	Yes, one side, parallel	16 feet	Tree Well, 5 X 5 feet min.
Plano Road Slip Road Frontage	60 feet	15 feet	1	N/A	16 feet One Way	N/A	Yes, one side, angled; other side parallel	15 feet	Tree Well, 5 X 5 feet min.



TOD Street Type 'A'

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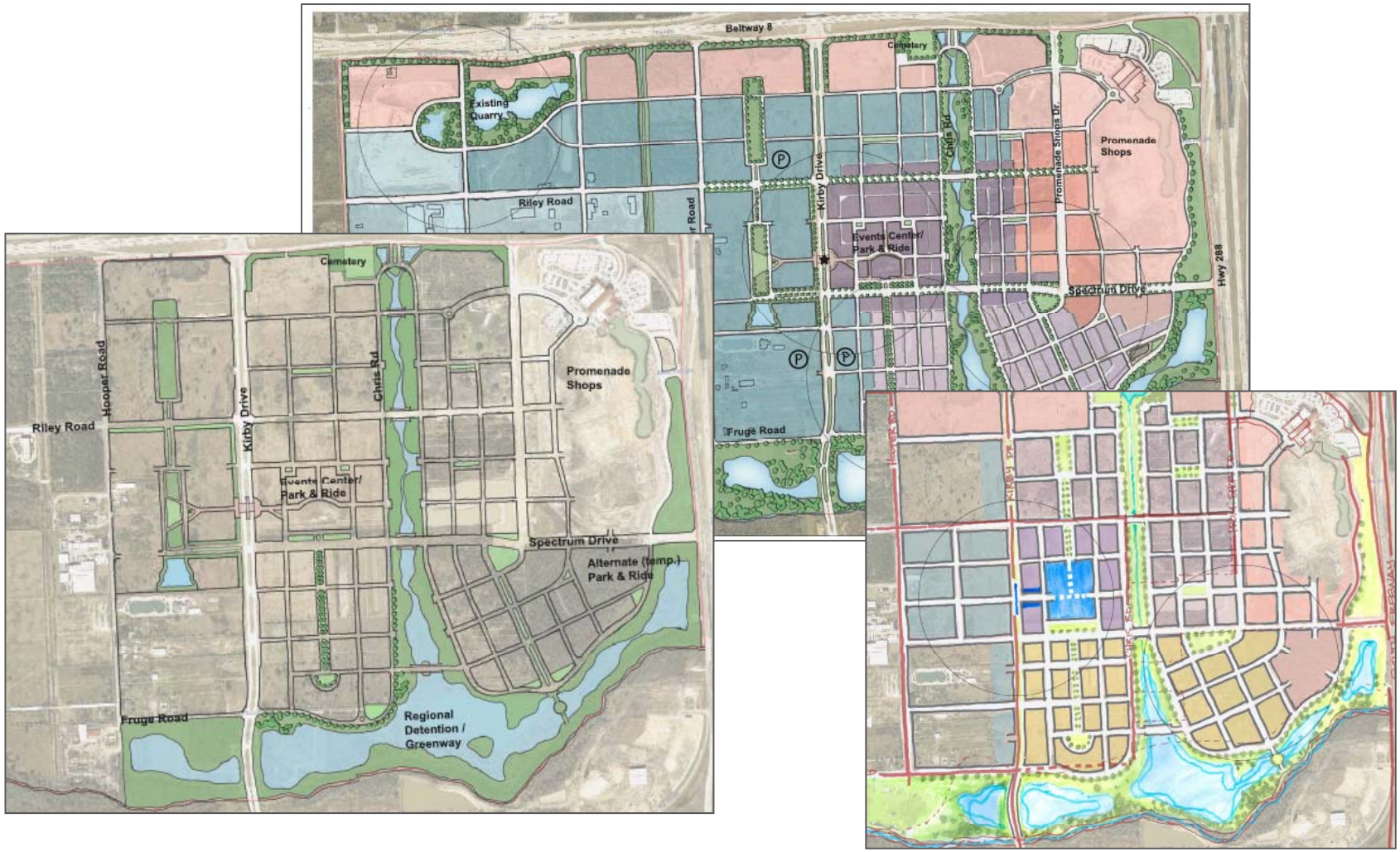
Spectrum District
Proposed Regulatory Framework

Refined Illustrative Framework Plan



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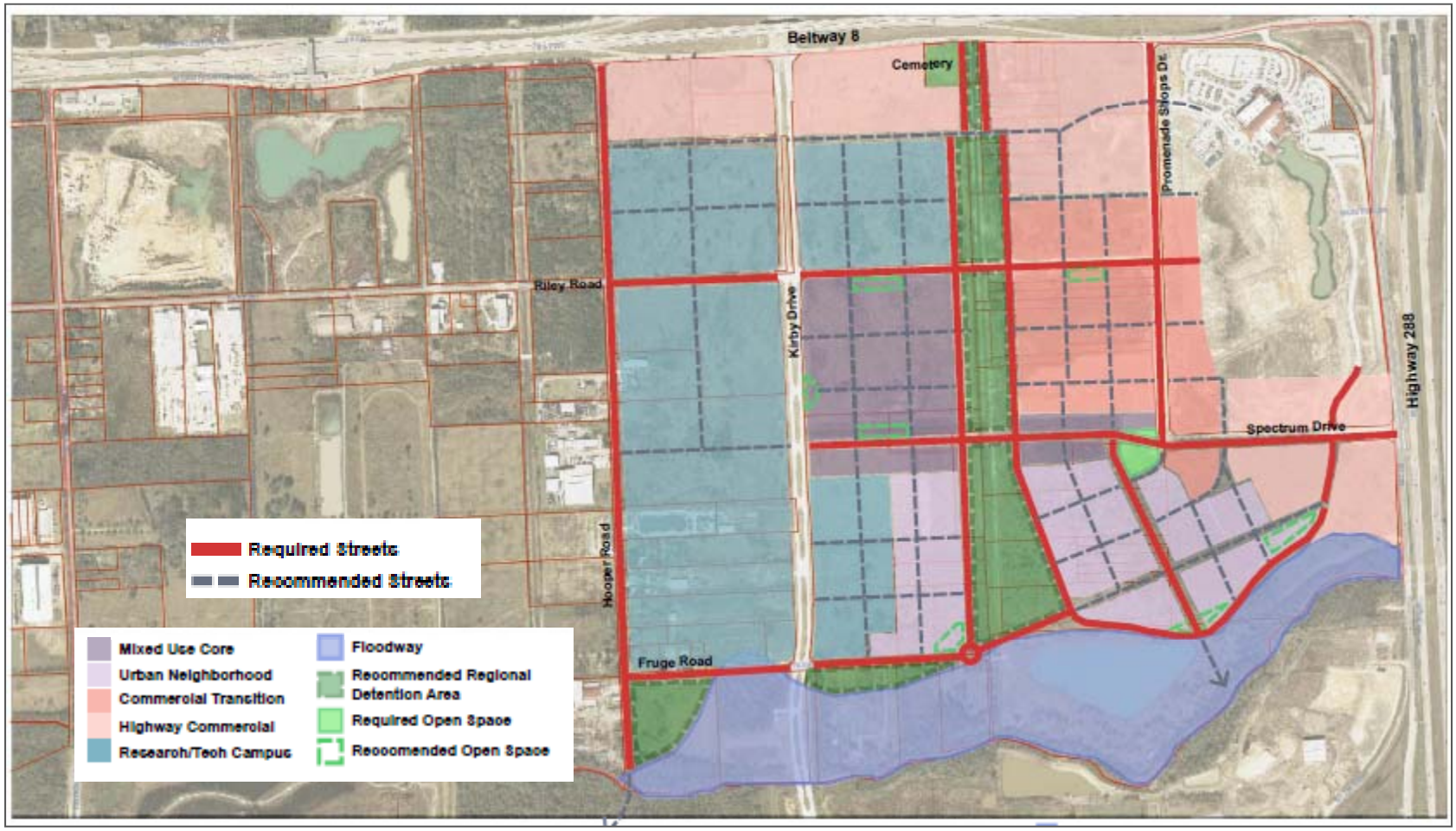
Form-Based Code Framework

- Establish 5 distinct "character" zones that implement a specific vision for each neighborhood within the Spectrum.
- These "character" zones are established based on existing context and overall Master Plan framework.
- Limit the extent of the form-based code to east of Hooper Road.
- Re-establish areas west of Hooper Road as light industrial.
- Tie the zoning framework to regional drainage and street network.

Final Illustrative Framework Plan and Rezoning Boundary



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Mixed Use Core

Mixed Use Core

PEARLAND TEXAS

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Urban Neighborhood

Research/Tech Campus

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Commercial Transition

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Highway Commercial

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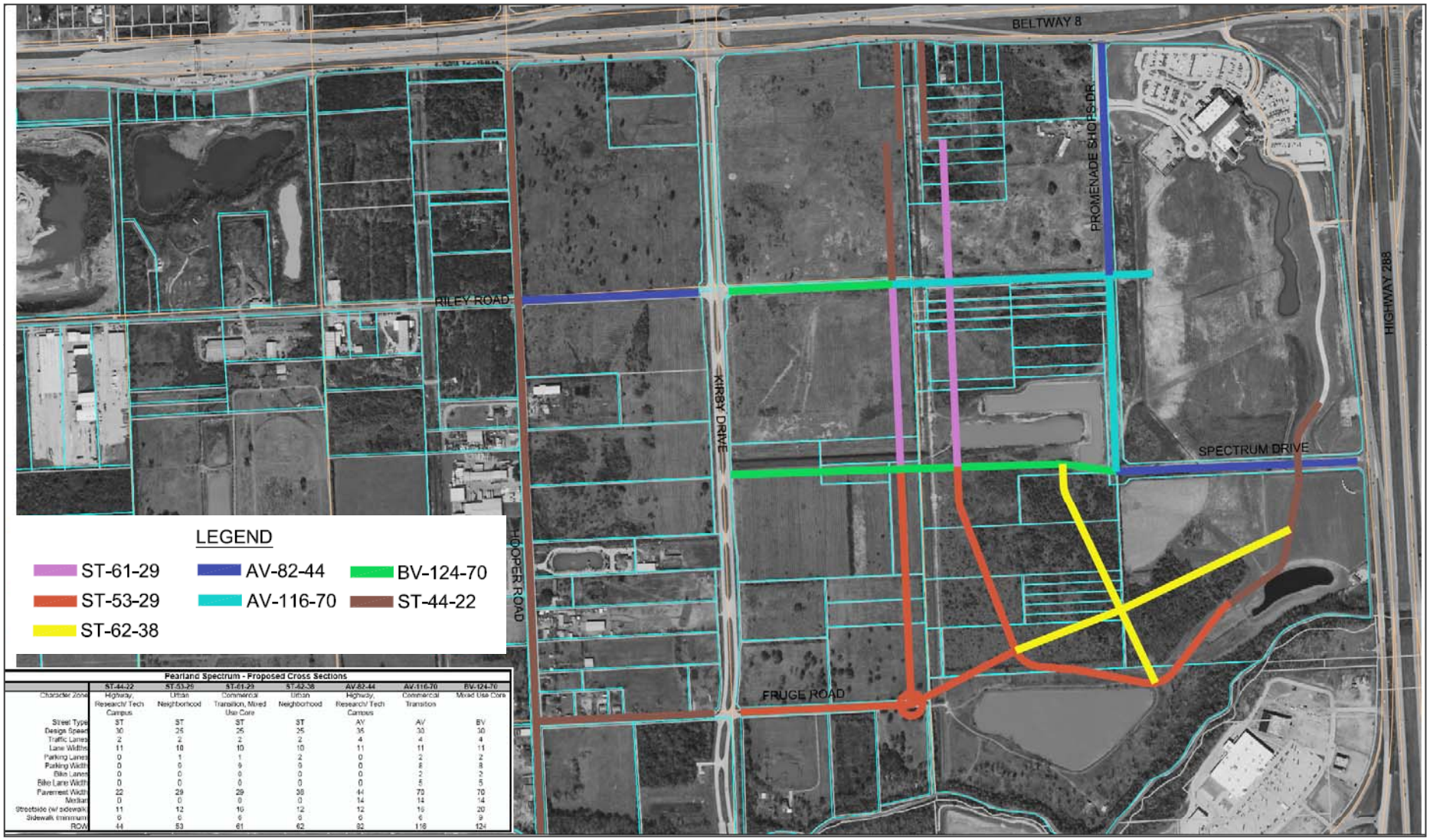
Discussion on developing a Form-Based Code Regulatory Framework for the Spectrum area.

Conceptual Street Network Plan

Street Network for Walkable Employment Center

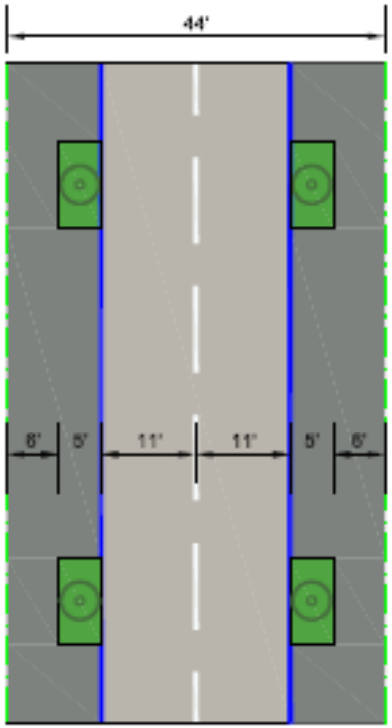


Pearland Spectrum - Proposed Cross Sections

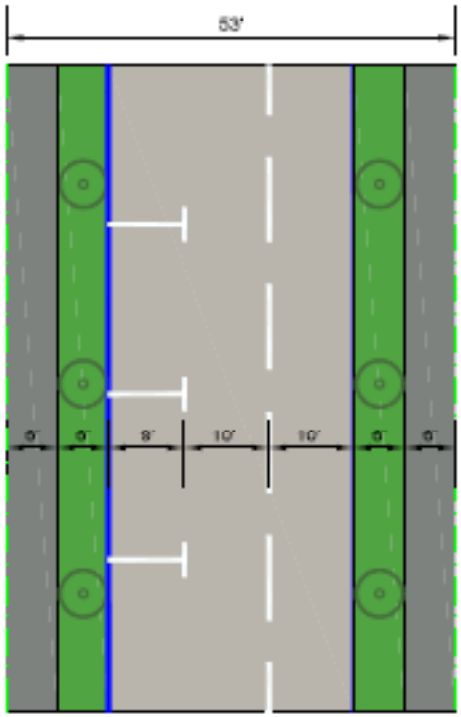
	ST-44-22	ST-53-29	ST-61-29	ST-62-38	AV-82-44	AV-116-70	BV-124-70
Character zone	Highway, Research/ Tech Campus	Urban Neighborhood	Commercial Transition, Mixed Use Core	Urban Neighborhood	Highway, Research/ Tech Campus	Commercial Transition	Mixed Use Core
Street Type	ST	ST	ST	ST	AV	AV	BV
Design Speed	30	25	25	25	35	30	30
Traffic Lanes	2	2	2	2	4	4	4
Lane Widths	11	10	10	10	11	11	11
Parking Lanes	0	1	1	2	0	2	2
Parking Width	0	0	9	9	0	8	8
Bike Lanes	0	0	0	0	0	2	2
Bike Lane Width	0	0	0	0	0	5	5
Pavement Width	22	29	29	38	44	70	70
Median	0	0	0	0	14	14	14
Streetside (w/ sidewalk)	11	12	16	12	12	16	20
Sidewalk minimum	6	6	6	6	6	6	9
ROW	44	53	61	62	92	118	124

Street Cross Sections

ST - 44 - 22

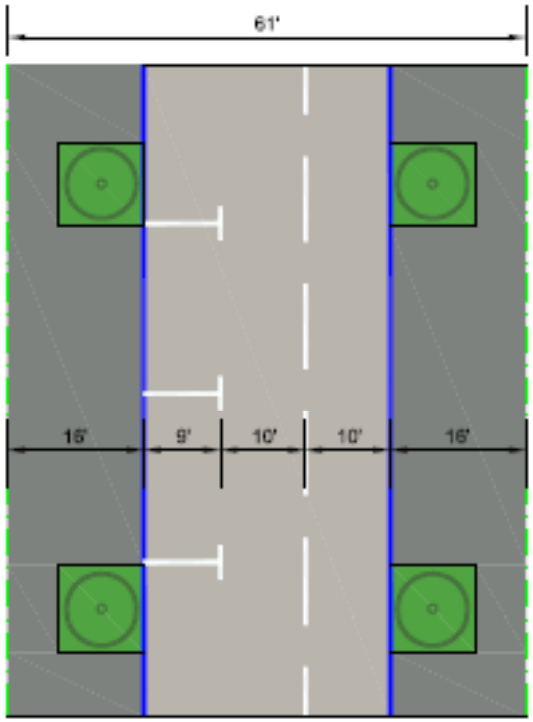


ST - 53 - 29

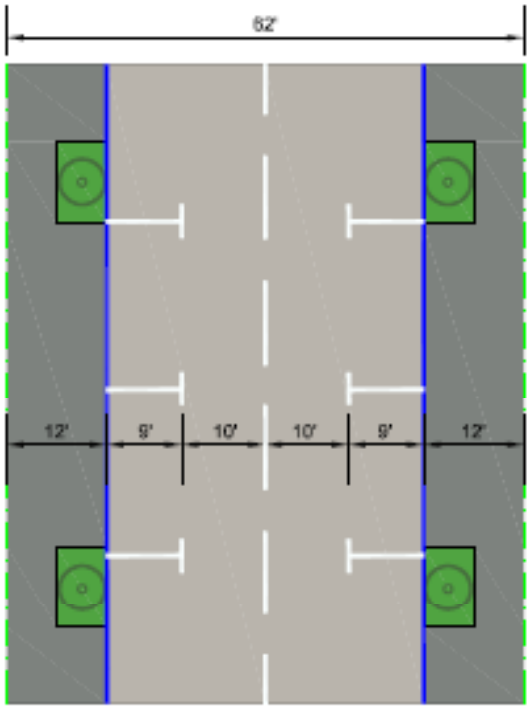


Street Cross Sections

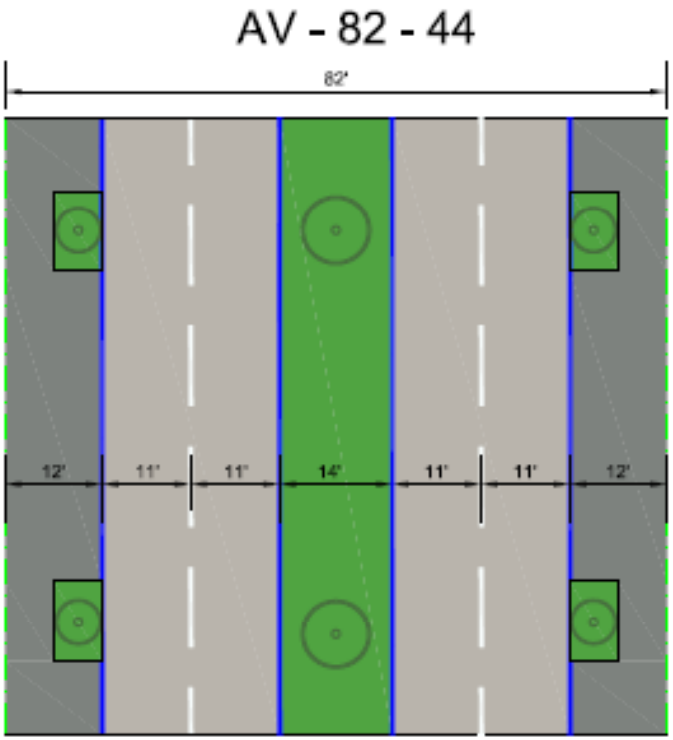
ST - 61 - 29

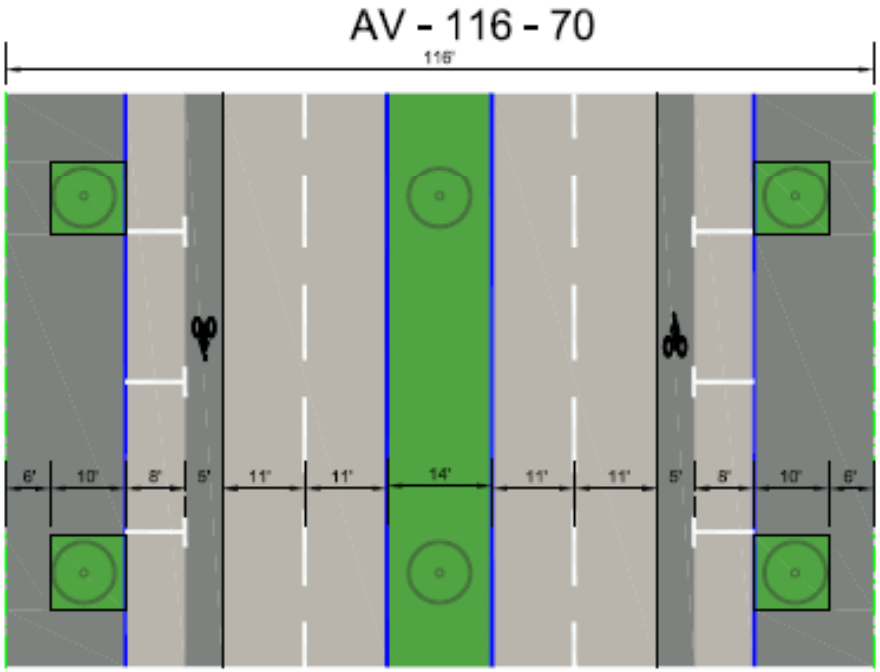


ST - 62 - 38

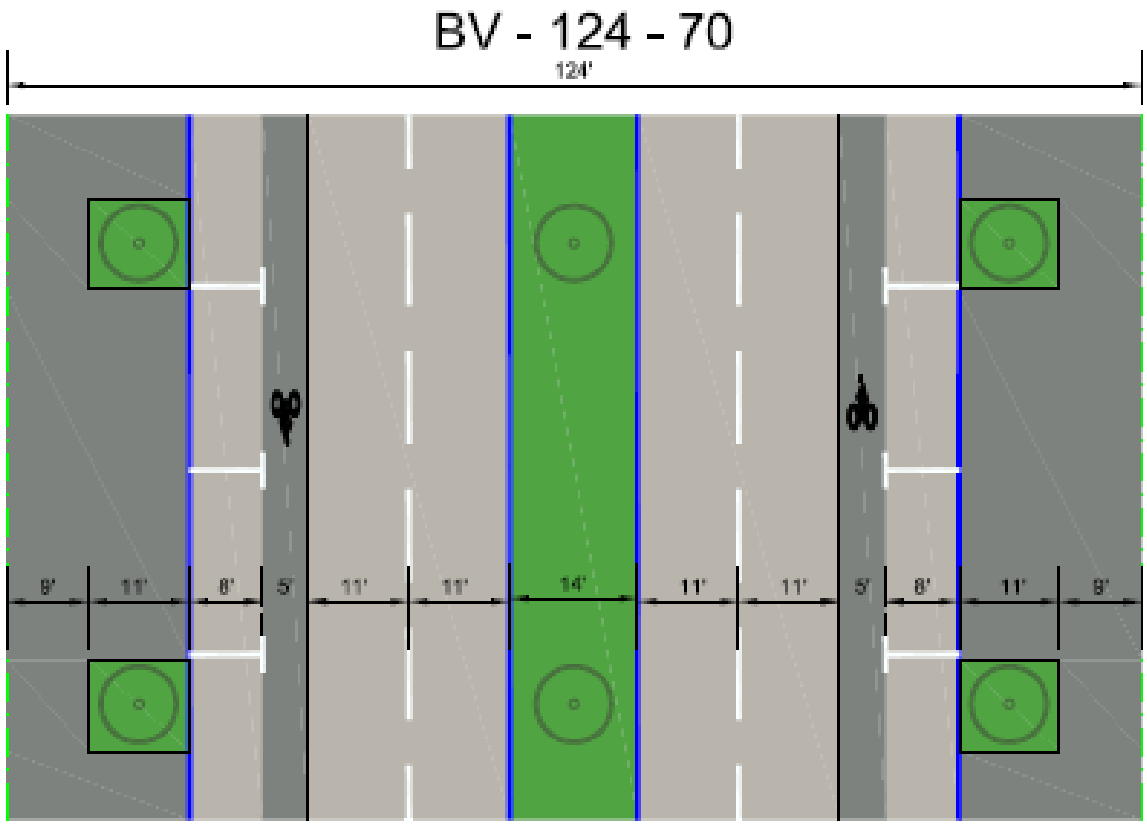


Street Cross Sections

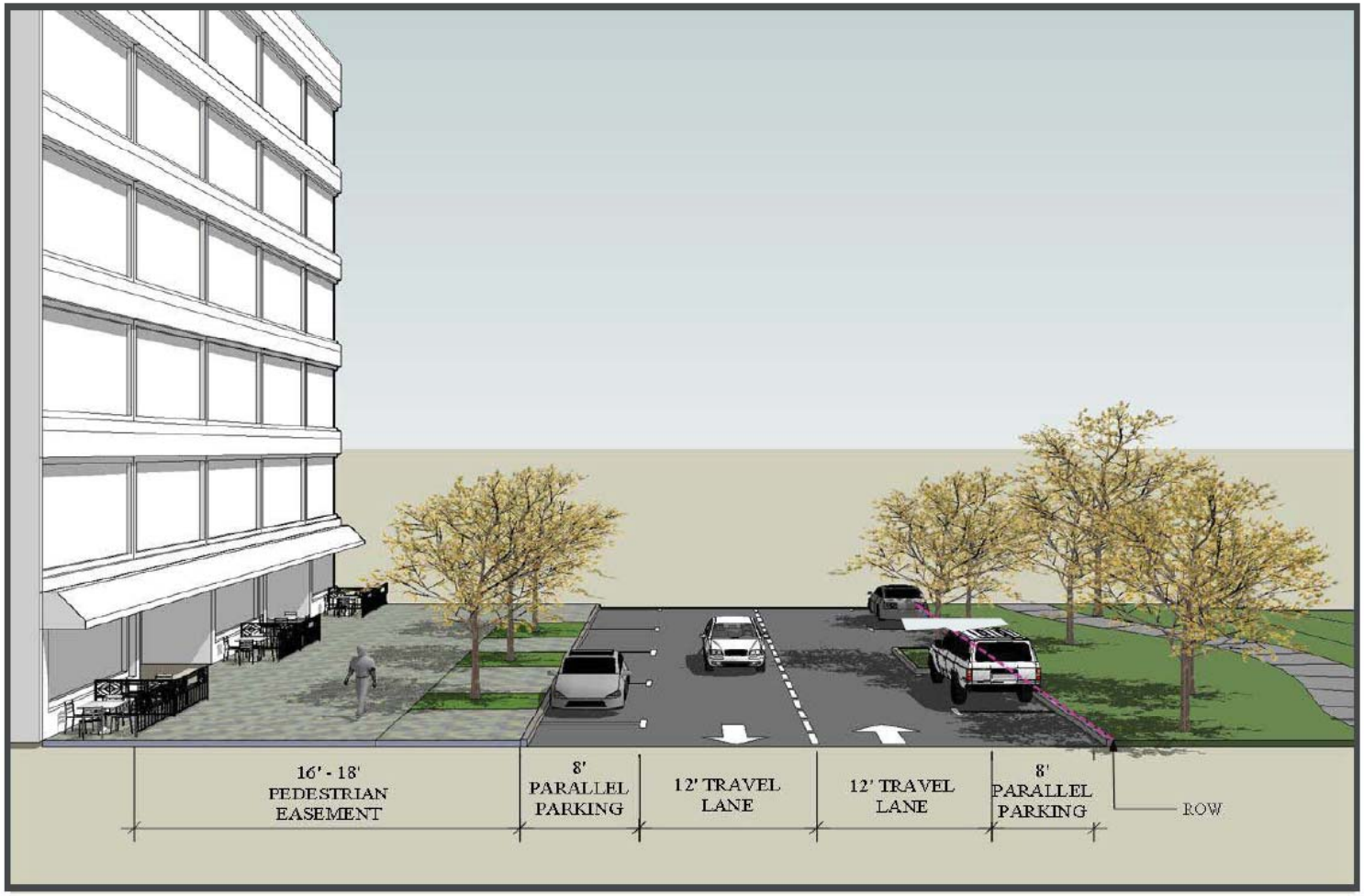




Street Cross Sections

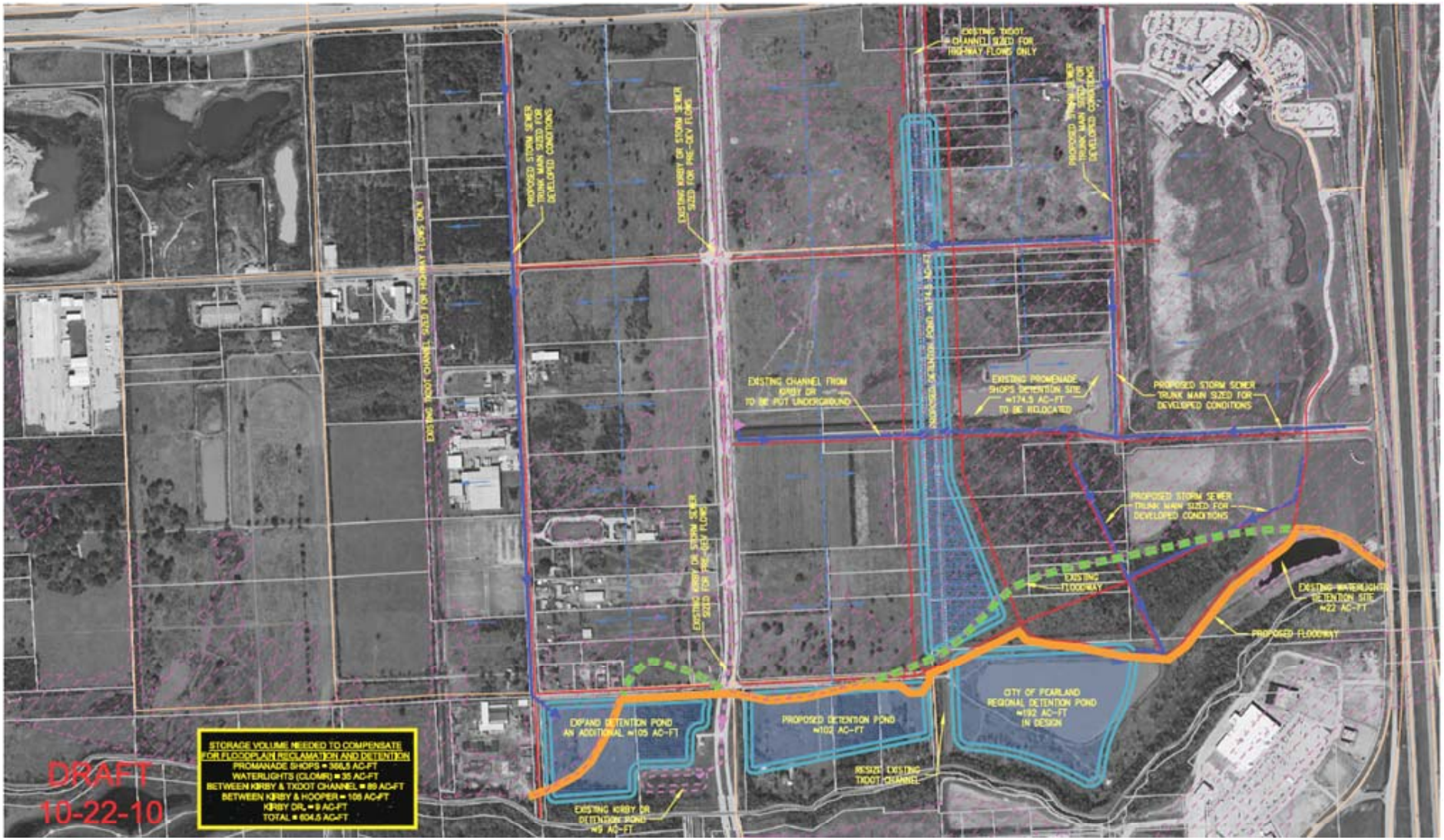


Street Section



Conceptual Regional Drainage Plan

Regional Drainage Framework



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Utilization of the TxDOT Channels for Regional Drainage

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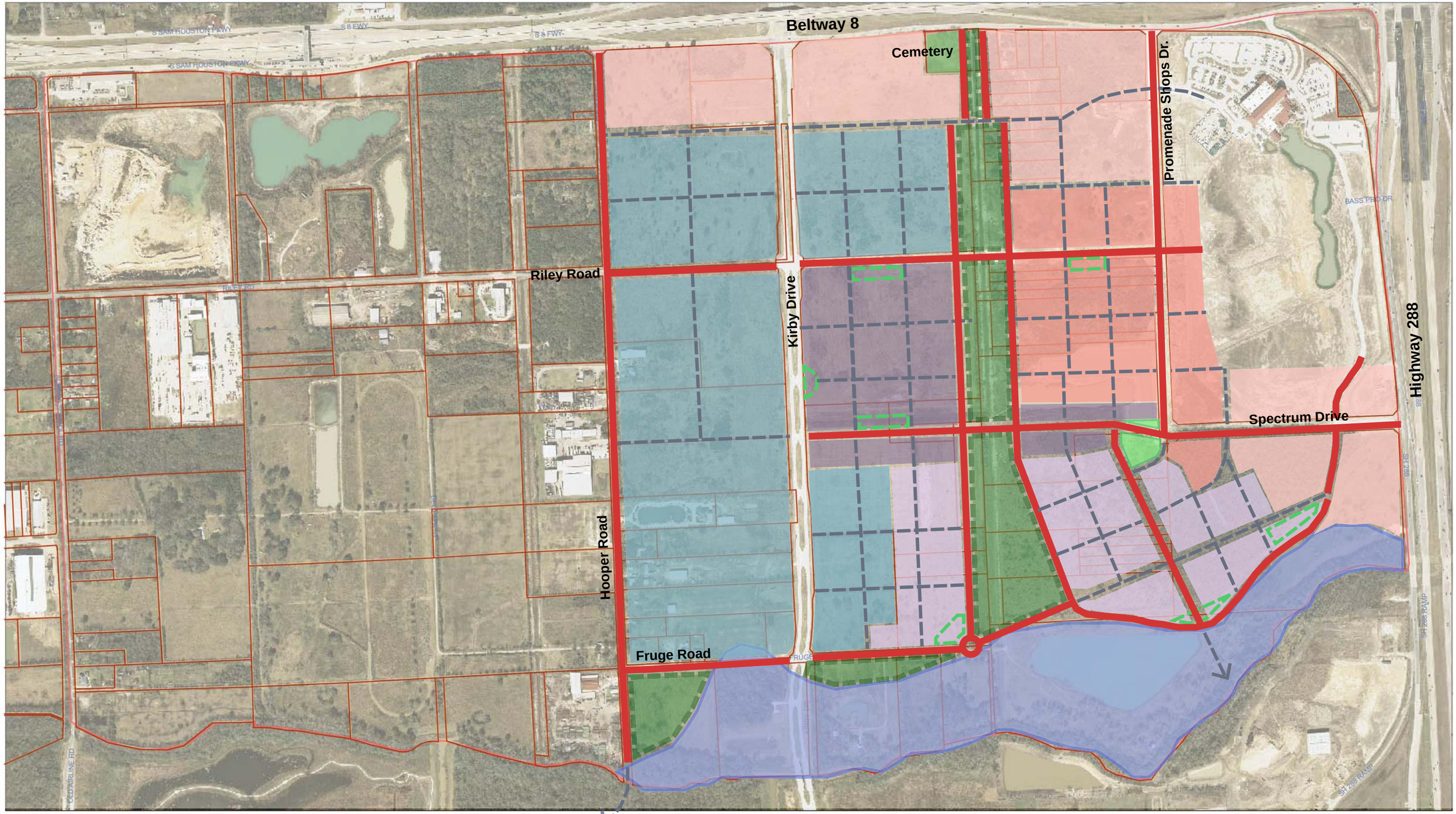
Next Steps

- Finalize the Regulatory Framework for the FBC
- Craft the form-based code for Spectrum
- Develop cost estimates for infrastructure and phasing plan
- Undertake a fiscal impact study
- Recommend public-private partnership strategy (MMDs, etc.)

Attachment 2



PROPOSED REZONING BOUNDARY
Spectrum District - City of Pearland
October 13, 2010

N W E S

0 250 500 1,000 Feet

- Required Streets
- Recommended Streets

- Mixed Use Core
- Urban Neighborhood
- Commercial Transition
- Highway Commercial
- Research/Tech Campus

- Floodway
- Recommended Regional Detention Area
- Required Open Space
- Reccomended Open Space

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Attachment 3

Spectrum District, Pearland, Texas
Form-Based Code Framework

Character District - Mixed Use Core	
Purpose and Intent	• Highest intensity of development in the Spectrum District • Maximize the locational benefits of the two regional highways and future light rail stop • Preserve the opportunity for higher intensity development when the market is mature
Building Scale and Massing	• 15 stories (maximum) • Clear distinction of a building 'base' that is 4 – 6 stories tall • Allow lower intensity buildings (1 – 2 stories) initially transitioning to higher intensity as market demand increases
Land Use Mix	• Ground floor commercial (retail, office, restaurant) and upper floors may be office, lodging or residential • Establish minimum height and intensity standards at key locations within the Mixed Use Core
Design Elements • Building articulation	• Building base is articulated at a pedestrian rhythm/scale (20' to 30' bay/demarcation width) • Upper floors are more flexible
• Materials	• Higher standards for building materials apply only to the building 'base' • Materials to be masonry (minimum 75%) of primary facades of building 'base' • Upper floor materials to be more flexible (include glass curtain wall, split face concrete, etc)
• Orientation	• Buildings built to the edge of the sidewalk establishing a strong street wall (90% building frontage along Type 'A' Streets) • High pedestrian orientation • Ground floors of buildings along Type 'A' Streets to be built to commercial standards
• Transitions to adjoining uses	• Establish building height transitions to adjoining Urban Neighborhood Zone
• Civic/Open Space	• Require/recommend plazas and squares • Establish standards for plazas and squares
• Landscaping	• Mostly in the public realm (street trees, plazas, and squares)
• Signage	• Limited to pedestrian oriented signage palette • Allow building identity signs on high-rise buildings
Parking strategy	• On-street parallel or angled parking • Off-street parking in parking structures • Establish regulations for interim surface parking lots to be phased into urban development • Establish the same parking ratio for all non-residential uses • Establish one ratio for all residential uses

Attachment 3

Block standards	• Urban block standards – generally block face dimensions not to exceed 400’ • Regular orthogonal grid • Allow for limited exceptions under certain design/performance criteria • Establish required and recommended street network on the Regulating Plan
Street Design Standards	• Establish a manual for the design of new streets within the Spectrum District to implement the goals of the plan. The Street Design manual would include context sensitive design standards for streets. • Standards will be established for cross sections, number of lanes, accommodate of pedestrians and bicyclists, parkway, development frontage, and streetscape standards based on the location and context of the street.
Approval Process	• Administrative approval for development that meets the standards established in the Code • Establish alternative legislative process with criteria for approval for development projects that do not meet the specific standards Code.
Phasing and Infrastructure	• Establish phasing plan for public infrastructure and infill of surface parking • Establish standards for any major civic venues such as the conference facility/convention facility

Characteristic Images

Attachment 3

Attachment 3

Character District – Urban Neighborhood	
Purpose and Intent	• Encourage the development of a unique walkable neighborhood of urban lofts, apartments, townhomes, and live-work units • Maximize frontage along the drainage features and creek
Building Scale and Massing	• 6 stories (maximum)
Land Use Mix	• Mostly residential with corner commercial uses and live-work uses • Live-work uses to include artists' studios and professional offices
Design Elements • Building articulation	• Building rhythm of 20' to 30' • Residential scale • Simple roofs and facades with porches, stoops, bay windows and balconies
• Materials	• Would allow for masonry, hardi plank, stucco as the primary building materials along Type 'A' Street facades (minimum 60%)
• Orientation	• Buildings to be built with shallow setbacks (less than 10') • Limit front loaded garages • High pedestrian orientation
• Transitions to adjoining uses	• NA
• Civic/Open Space	• Require/recommend greens, parks, play grounds • Establish standards for the same
• Landscaping	• Both in the public and private realms
• Signage	• Live-work units and corner commercial to be • permitted pedestrian oriented signage
Parking strategy	• On-street parallel or angled parking • Off-street parking in parking structures or surface parking in the rear of the lot (behind the principal structure) • Establish the same parking ratio for all non-residential uses • Establish one ratio for all residential uses
Block standards	• Urban block standards – generally block face dimensions not to exceed 600' • Regular orthogonal grid or curved to match topography or address natural features • Allow for limited exceptions under certain design/performance criteria • Establish required and recommended street network on the Regulating Plan

Attachment 3

Street Design Standards	• Establish a manual for the design of new streets within the Spectrum District to implement the goals of the plan. The Street Design manual would include context sensitive design standards for streets. • Standards will be established for cross sections, number of lanes, accommodate of pedestrians and bicyclists, parkway, development frontage, and streetscape standards based on the location and context of the street.
Approval Process	• Administrative approval for development that meets the standards established in the Code • Establish alternative legislative process with criteria for approval for development projects that do not meet the specific standards Code.
Phasing and Infrastructure	• Establish phasing plan for public infrastructure

Characteristic Images

Attachment 3

Character District – Research/Tech Campus	
Purpose and Intent	• Encourage the development of a regional employment center • Establish an overall "campus" like design vocabulary within which individual projects can vary • Link to regional highways and future rail transit
Building Scale and Massing	• 6 stories (maximum)
Land Use Mix	• Mostly office, research, flex-office, and supporting uses • Light industrial and assembly uses • Educational and other institutional uses • Ensure that the Kirby Drive frontage is consistently developed with the Mixed Use Core
Design Elements • Building articulation	• Some building articulation required • Simple building and roof forms
• Materials	• Allow a range of building materials
• Orientation	• Buildings shall be set in a campus environment with landscaping and natural features • Pedestrian linkages and trails to be provided • Development to be both auto and pedestrian oriented (hybrid) • Emphasis on key linkage streets for more pedestrian oriented development
• Transitions to adjoining uses	• Buffer/screen loading, unloading and service areas
• Civic/Open Space	• More natural and unstructured spaces • Generally private yards
• Landscaping	• Combination of private and public landscaping
• Signage	• Unified wayfinding program with a palette of monument and building signs
Parking strategy	• Off-street parking in parking structures or surface parking • Screen surface parking from adjacent streets and development • Landscape surface parking lots • Allow shared parking
Block standards	• Allow larger block standards 800' – 1,200' • Establish a limited required/recommended street network
Street Design Standards	• Establish a manual for the design of new streets within the Spectrum District to implement the goals of the plan. The Street Design manual would include context sensitive design standards for streets. • Standards will be established for cross sections, number of lanes, accommodate of pedestrians and bicyclists, parkway, development frontage, and streetscape standards based on the location and context of the street.

Attachment 3

Approval Process	• Administrative approval for development that meets the standards established in the Code • Establish alternative legislative process with criteria for approval for development projects that do not meet the specific standards Code.
Phasing and Infrastructure	• Establish phasing plan for public infrastructure

Characteristic Images

Attachment 3

Character District – Commercial Transition	
Purpose and Intent	• Intended as a transition between the Highway Commercial and Urban Neighborhood zones
Building Scale and Massing	• 6 stories (maximum)
Land Use Mix	• Mix of smaller professional/garden office and retail uses • Some live work uses as a transition
Design Elements • Building articulation	• • Building rhythm of 20' to 30' • Residential scale • Simple roofs and facades
• Materials	• Materials to be masonry (minimum 75%) of primary facades of building
• Orientation	• Buildings to be built to the edge of the sidewalk or with shallow setbacks (less than 10') • Suburban orientation towards the Highway Commercial frontage and urban orientation towards the Urban Neighborhood frontage
• Transitions to adjoining uses	• Transitions happen at the back of buildings
• Civic/Open Space	• Require/recommend plazas and squares
• Landscaping	• Both in the public and private realms
• Signage	• Allows both pedestrian-oriented and auto-oriented signage (monument signs) when adjoining Mixed Use Core or Highway Commercial
Parking strategy	• On-street parallel or angled parking • Off-street parking in surface parking at the rear of the lot (behind the principal structure or along Highway Commercial zone frontage) • Establish the same parking ratio for all non-residential uses
Block standards	• Transitions from a suburban scale to the Urban Neighborhood scale. Block face dimensions not to exceed 600' • Regular orthogonal grid or curved to match topography or address natural features • Allow for limited exceptions under certain design/performance criteria • Establish required and recommended street network on the Regulating Plan
Street Design Standards	• Establish a manual for the design of new streets within the Spectrum District to implement the goals of the plan. The Street Design manual would include context sensitive design standards for streets. • Standards will be established for cross sections, number of lanes, accommodate of pedestrians and bicyclists, parkway, development frontage, and streetscape standards based on the location and context of the street.

Attachment 3

Approval Process	• Administrative approval for development that meets the standards established in the Code • Establish alternative legislative process with criteria for approval for development projects that do not meet the specific standards Code.
Phasing and Infrastructure	• Establish phasing plan for public infrastructure

Characteristic Images

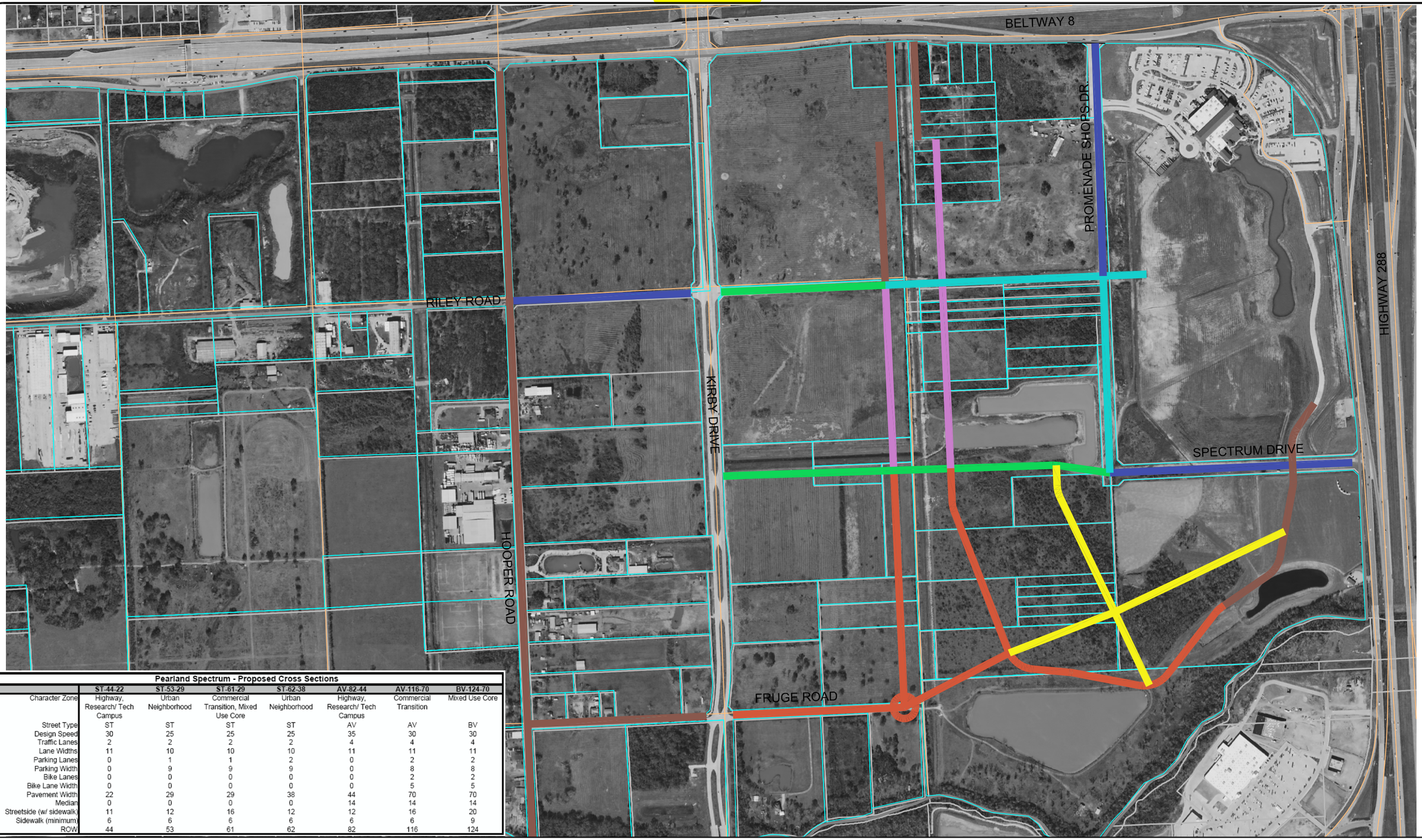
Attachment 3

Character District – Highway Commercial	
Purpose and Intent	• Intended for regional scale retail and employment uses that take advantage of highway frontage along 2 major roadways
Building Scale and Massing	• 15 stories (maximum)
Land Use Mix	• Mostly large format retail with restaurants and entertainment uses or high to mid-rise office buildings • May include lodging and related uses
Design Elements • Building articulation	• Focus on minimizing the impact of a 'big box' look • Horizontal and vertical articulation to break up the building mass
• Materials	• Allow a range of building materials; primarily masonry for retail/restaurant and masonry, glass, and more flexible materials for high to mid-rise office.
• Orientation	• Buildings set back from the highway frontage roads • Low pedestrian orientation along the highway frontage, but higher pedestrian orientation on the cross streets and interior roadways.
• Transitions to adjoining uses	• NA
• Civic/Open Space	• Private yards
• Landscaping	• Generally in the private realm • Screening of parking and service areas
• Signage	• Auto-oriented palette of signs (generally monument and building signs)
Parking strategy	• Off-street parking in surface parking along the highway frontage • Soften surface parking lots with landscaping and shade trees
Block standards	• Allow larger blocks (greater than 1,000 block face dimensions)
Street Design Standards	• Establish a manual for the design of new streets within the Spectrum District to implement the goals of the plan. The Street Design manual would include context sensitive design standards for streets. • Standards will be established for cross sections, number of lanes, accommodate of pedestrians and bicyclists, parkway, development frontage, and streetscape standards based on the location and context of the street.
Approval Process	• Administrative approval for development that meets the standards established in the Code • Establish alternative legislative process with criteria for approval for development projects that do not meet the specific standards Code.
Phasing and Infrastructure	• Limited public infrastructure

Attachment 3

Characteristic Images

Attachment 4



Pearland Spectrum - Proposed Cross Sections

	ST-44-22	ST-53-29	ST-61-29	ST-62-38	AV-82-44	AV-116-70	BV-124-70
Character Zone	Highway, Research/ Tech Campus	Urban Neighborhood	Commercial Transition, Mixed Use Core	Urban Neighborhood	Highway, Research/ Tech Campus	Commercial Transition	Mixed Use Core
Street Type	ST	ST	ST	ST	AV	AV	BV
Design Speed	30	25	25	25	35	30	30
Traffic Lanes	2	2	2	2	4	4	4
Lane Widths	11	10	10	10	11	11	11
Parking Lanes	0	1	1	2	0	2	2
Parking Width	0	9	9	9	0	8	8
Bike Lanes	0	0	0	0	0	2	2
Bike Lane Width	0	0	0	0	0	5	5
Pavement Width	22	29	29	38	44	70	70
Median	0	0	0	0	14	14	14
Streetside (w/ sidewalk)	11	12	16	12	12	16	20
Sidewalk (minimum)	6	6	6	6	6	6	9
ROW	44	53	61	62	82	116	124

0' 600'

CONCEPTUAL STREET NETWORK PLAN
SPECTRUM DISTRICT - CITY OF PEARLAND

LEGEND

- ST-61-29
- ST-53-29
- ST-62-38
- AV-82-44
- AV-116-70
- BV-124-70
- ST-44-22

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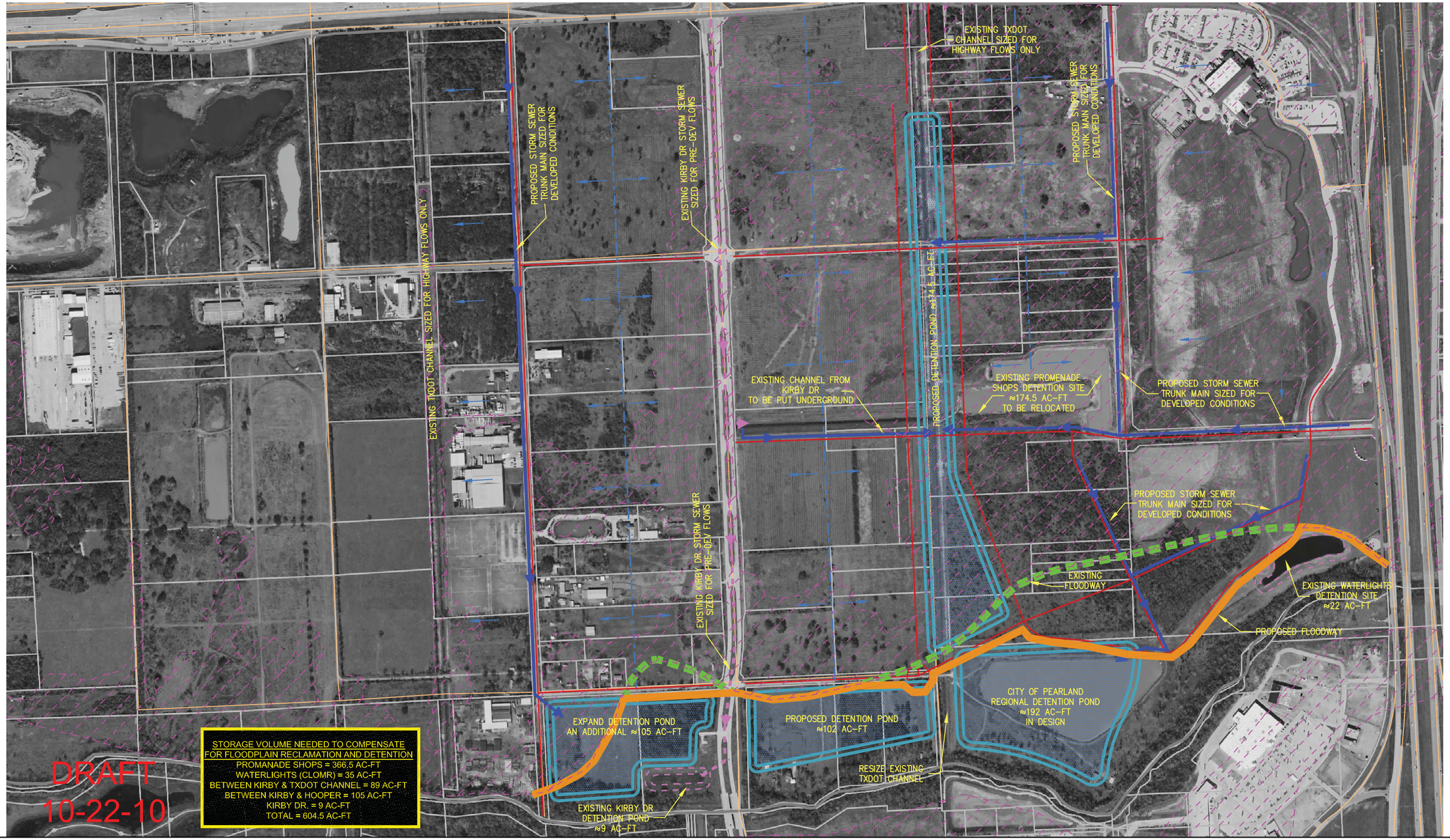

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CONCEPTUAL STORMWATER MANAGEMENT PLAN
SPECTRUM DISTRICT - CITY OF PEARLAND

LEGEND

- FLOW ARROW
- WATERSHED DIVIDE
- 100 YR FLOODPLAIN

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Exhibit 6

What is a form-based code?

1

Exhibit 6

Conventional zoning vs. form-based code

conventional vs. form-based

CONVENTIONAL ZONING VS. FORM BASED CODES

CONVENTIONAL ZONING HAS RESULTED IN THE SEPARATION OF USES AND HAS CREATED AUTOMOBILE-DEPENDANT ENVIRONMENTS.

AN EXAMPLE OF A MIXED-USE NEIGHBORHOOD, WHERE SINGLE-FAMILY, MULTIFAMILY, AND COMMERCIAL USES ARE ALL WITHIN EASY WALKING DISTANCE OF EACH OTHER.

Conventional zoning regulations

Conventional zoning was developed to protect property values by separating incompatible uses in a particular area or district. This separation was typically accomplished by creating single or limited use zones, which segregated different land uses, such as residential and commercial. Development with spatially separate land uses became the norm. This separation of uses, along with the automobile becoming the preeminent transportation mode, created the character of suburban communities we have today. Many zoning ordinances originated during the '50s and '60s, and although virtually all have been amended since then, most retain the principles of segregating land uses and neglecting all transportation modes except the automobile. Examples include commercial zones, which prohibit residential uses, or development regulations that have detailed automobile parking standards but no on-site circulation requirements for pedestrians.

Because the original purpose of zoning was to prevent incompatible uses moving into the neighborhood, zoning regulations are often reactive, focusing on what is not allowed. These standards and design requirements are usually applied generically throughout the entire community. This preoccupation with separating incompatible uses often bears no relationship to the real transportation or land use issues in the community.

A second important characteristic of conventional zoning is the use of numerical parameters to regulate development form. These include floor area ratios (FARs), dwelling units per acre, building heights and setbacks, and parking ratios. These indirectly affect development form, but not in a manner that is easily visualized or predictable. Zoning regulations are often applied in a one-size-fits-all manner, without any specific planning or thought about what the community wants development character to be. Although the resulting development may be "compatible" in terms of density, for example, it can often be incompatible with the context of the surrounding neighborhood.

Exhibit 6

a conventional zoning table

(a)

District	Minimum Required #Open Space Ratio#	Maximum #Floor Area Ratio#
R1 R2*	150.0	0.50

* R2A and R2X are subject to the provisions of paragraph (b).

(b)

District	Maximum #Lot Coverage# (in percent)	Minimum Required #Open Space# (in percent)	Maximum #Floor Area Ratio#
R2A	30	70	.50
R2X	governed by #yard# requirements		.85
R3-1 R3-2	35	65	.50
R3A R3X	governed by #yard# requirements		.50
R4	45	55	.75
R4A R4-1	governed by #yard# requirements		.75
R4B	55	45	.90
R5	55	45	1.25
R5A	governed by #yard# requirements		1.10
R5B	55	45	1.35
R5D	60*	40*	2.00

* For #corner lots#, the maximum #lot coverage# shall be 80 percent and the minimum required #open space# shall be 20 percent.

A CONVENTIONAL ZONING TABLE

IN MANY CONVENTIONAL ZONING CODES, TABLES EXPLAINING DEVELOPMENT STANDARDS, USE REGULATIONS, FAR LIMITATIONS, DENSITY REQUIREMENTS, AND PARKING REQUIREMENTS CAN BE CUMBERSOME AND DIFFICULT TO UNDERSTAND.

Exhibit 6

Third, conventional zoning ordinances deal with private development, but typically do not include standards for the design or character of the streets that serve it. These standards are usually left to the city engineer or public works department. Street standards are normally created with a distinct deference to accommodating automobile traffic. They are based on general street classification (arterial, collector, and local) with no special consideration of how these standards relate to the different areas the streets serve. For example, it is common for an arterial street to have the same design as it travels through employment, commercial, and residential districts in a city.

This general application of development and street standards does not allow zoning ordinances to promote development envisioned by community plans. In fact, zoning regulations often undermine the very plans they are supposed to support. Conventional zoning has often has led to dysfunctional communities, which exhibit many of the traits the Blueprint Plan hopes to avoid in the future, including:

- Separation of uses related to daily activity (e.g., home, school, and work);
- Limited transportation choices;
- Few distinct centers or downtown districts;
- Low density development and relatively limited housing choices; and
- Excessive land consumption.

Exhibit 6

using form-based codes to transform the public realm

USING FORM-BASED CODES TO TRANSFORM THE PUBLIC REALM

FORM-BASED CODES TYPICALLY INCLUDE STANDARDS FOR THE DESIGN AND CHARACTER OF PUBLIC STREETS, THEREBY TAKING A STRONGER ROLE IN SHAPING THE PHYSICAL ENVIRONMENT THAN A CONVENTIONAL ZONING CODE. THIS PHOTO SIMULATION OF THE 65TH STREET AREA ILLUSTRATES HOW BUILDING DESIGN AND STREETSCAPE STANDARDS CAN TRANSFORM THE PUBLIC REALM.

Exhibit 6

Form-based code: implementing a vision

Form-based codes differ from conventional zoning because they:

1. Are the result of a ***public design process***, which creates a clear and articulate vision for a defined district or neighborhood. A form-based code is developed as an outcome of this process to help implement the vision.

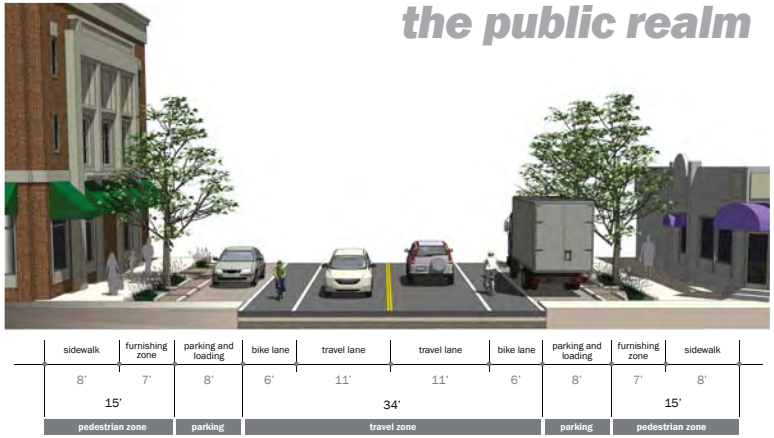
2. Pay greater attention to the design of ***the public realm*** and the importance that streetscape design and individual building character have in defining public spaces and a special sense of place. Of special significance is the integration of street standards with the desired physical character of the abutting development.

public design process

PUBLIC DESIGN PROCESS

IN ORDER TO ENSURE THAT A CLEAR AND ARTICULATE VISION IS FORMED FOR THE PLANNING AREA, FORM-BASED CODES ARE THE RESULT OF A THOROUGH PUBLIC DESIGN PROCESS.

the public realm



PORTLAND DEVELOPMENT COMMISSION/SERA ARCHITECTS

THE PUBLIC REALM

FORM-BASED CODES FOCUS ON THE DESIGN OF THE PUBLIC REALM AS WELL AS INDIVIDUAL BUILDING DESIGN, RESULTING IN MORE UNIFIED AND COHERENT PUBLIC SPACES.

Exhibit 6

3. Emphasize ***site design and building form*** over density and use regulations. Form-based codes pay more attention to the buildings, which will last many years, instead of the uses, which change over time.

4. Encourage a ***mix of uses and housing types*** to reduce the need to travel as part of one's daily routine.

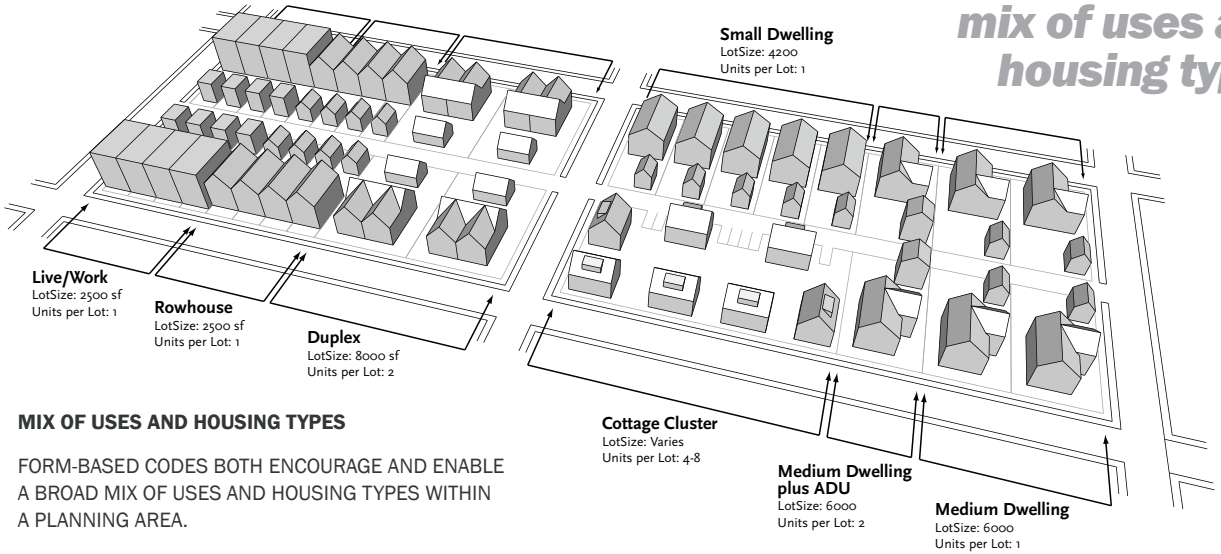
site design and building form

SERA ARCHITECTS

SITE DESIGN AND BUILDING FORM

FORM-BASED CODES EMPHASIZE BUILDING DESIGN RATHER THAN USE.

mix of uses and housing types



SERA + URBSWORKS

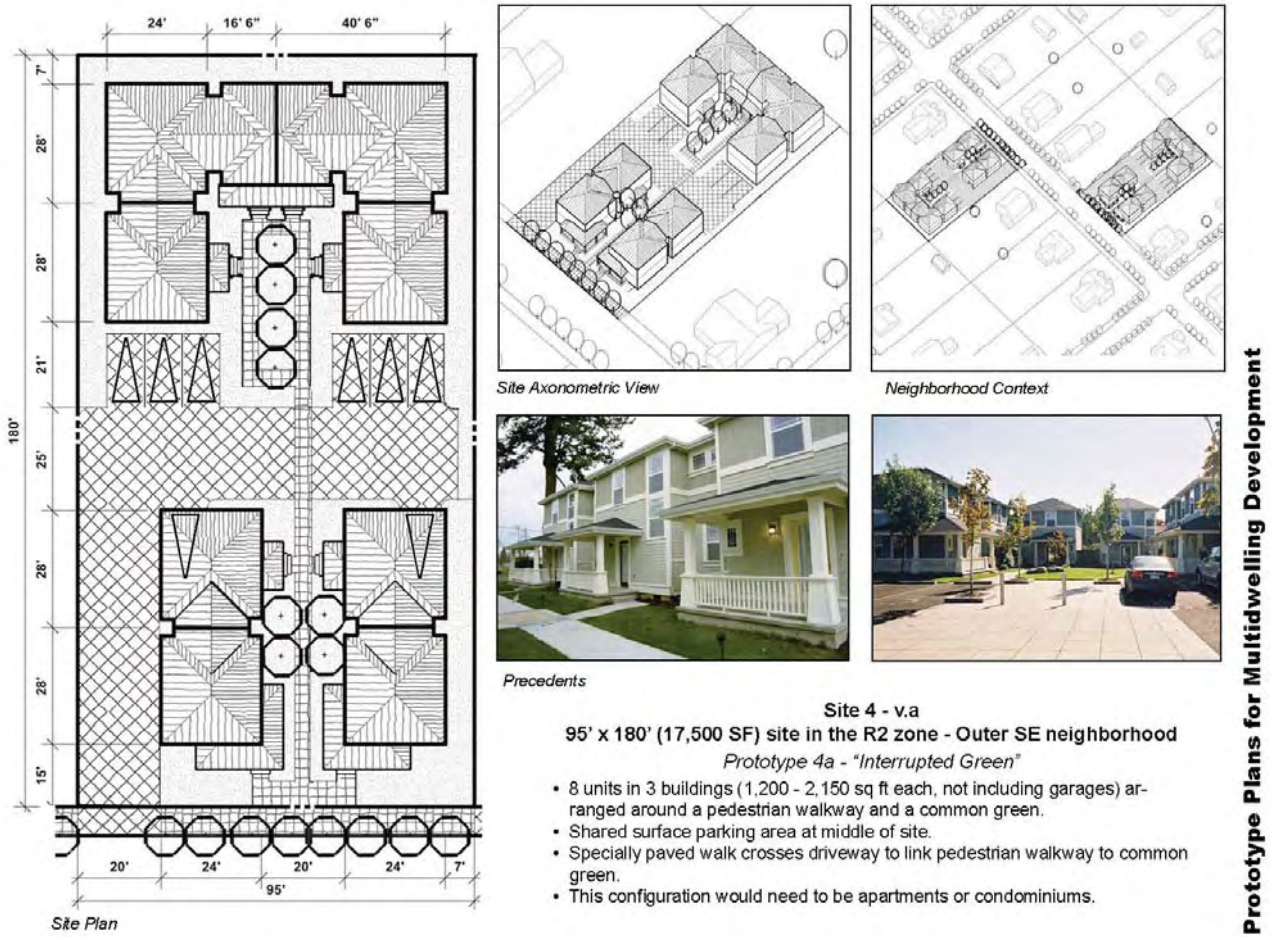
MIX OF USES AND HOUSING TYPES

FORM-BASED CODES BOTH ENCOURAGE AND ENABLE A BROAD MIX OF USES AND HOUSING TYPES WITHIN A PLANNING AREA.

Exhibit 6

illustrating the standards

5. Make much greater use of ***illustrations*** to explain important design elements rather than relying on numeric standards and text.



ILLUSTRATING THE STANDARDS

DETAILED ILLUSTRATIONS HELP TO CLEARLY COMMUNICATE A COMMUNITY'S DESIRED VISION FOR THE DEVELOPMENT AND DESIGN OF ITS VARIOUS NEIGHBORHOODS AND CENTERS.

Exhibit 6

Advantages of the form-based code approach

To some extent, all of the seven Blueprint Growth Principles must rely upon thoughtful design solutions to be successful. For example, providing transportation choices involves more than just furnishing sidewalks and bike lanes. It requires locating different uses and destinations closer together, carefully designing streetscapes, and integrating private and public development to create a safe and inviting public realm. This careful attention to detail represents the overall strength of a well-executed form-based code. Additionally, some other notable advantages of the form-based code approach include:

1. Encouraging **active public participation** in creating the regulating plan and related design elements. This public participation and consensus building at the beginning increases public understanding of the plan and its desired results, thereby reducing misunderstanding and conflict during implementation.

2. **Focusing on what the community wants** and not what it dislikes. A form-based code offers an alternative regulatory approach for successfully reaching planning objectives embodied in the Blueprint Growth Principles and local general plans by shifting the focus to the desired physical character of development. For example, the public's desire for pedestrian-friendly environments is often related to the design and physical relationships of buildings and public spaces. An FBC provides a means to get to the heart of these types of community concerns and plan for them. This attention to what is desired makes it much easier for developers, citizens, and decision-makers to be "on the same page" when individual development projects are proposed. With form-based codes, the community can offer its preferences on a variety of issues that relate to the community's physical appearance: architectural design, street design, building orientation, how to address different housing needs, and how to manage growth in general.

3. Providing information that is **easier to use** than conventional zoning codes because it is shorter, is more concise, and emphasizes illustrations over text. Therefore, form-based codes are more engaging and comprehensible to non-professionals.

4. **Tailoring the requirements** to fit a specific place or neighborhood by reflecting its vernacular architecture and overall character.

When to apply a form-based code

A form-based code may be applied in a wide variety of circumstances ranging from specific development sites to an entire city. Examples include downtown master plans, neighborhood revitalization plans, specific plan development standards, and transit-oriented developments. It is particularly useful in planning areas where the physical character of public spaces and buildings is critical to achieving community planning goals.

a quick comparison...

Conventional Zoning	Form-Based Code
Often applied universally throughout a jurisdiction	Created for a specific planning area
Reactive, focusing on preventing bad things from happening	Purposeful, "pro-active," and focused on implementation of community planning goals and objectives
Focus on land use	Connects urban form and land use
Development standards inadvertently or intentionally discourage compact, mixed-use, and pedestrian-friendly development	Primary focus is on achieving compact, mixed-use, and pedestrian-friendly development
Text-based presentation	Liberal use of graphics to define key concepts and requirements

Exhibit 6

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Form First

The New Urbanist alternative to conventional zoning.

By Peter Katz

"Just throw your existing zoning in the garbage."

That's what New Urbanist architect-planner Andres Duany exhorts audiences to do in his lectures about the decline of America's suburbs.

When I first heard Duany express this view in the early 1990s, I was taken aback, as, I'm sure, most planners were. It seemed outrageous to suggest that zoning, the body of law that controls development in 99 percent of America's communities, could be so easily dismissed.

Since then, however, I've come to believe that Duany's prescription may not be so radical after all. His main point is that conventional zoning based on the segregation of land uses was never intended to deal with physical form, and that the "band-aid" measures (including design guidelines) that planners cobble onto existing ordinances to address this deficiency just make matters worse. Something else is needed, and that something else is what New Urbanists call form-based coding.

What is it?

As its name suggests, form-based coding seeks to regulate the *form* of the built environment. In contrast, conventional zoning primarily seeks to control land use and density, but is largely silent on matters of form beyond the most basic height, floor-area, and setback limits for individual buildings.

The new approach builds on the idea that physical form is a community's most intrinsic and enduring characteristic. It seeks to codify that form in a straightforward way so that planners, citizens, developers, and other stakeholders can move easily from a shared physical vision of a place to its built reality.

To understand the concept, think of the way neighborhoods change over time. In many cities, warehouse and industrial areas have morphed into trendy arts districts with galleries and restaurants at street level and loft housing above. The form of the buildings has remained fairly constant, while internal uses and activity patterns have been transformed.

Under the current, use-based zoning system, such a change would be considered drastic. The land-use category has gone from industrial, at one end of the spectrum, to residential, at the other, although to the average onlooker, the place looks pretty much the same. In this example, a form-based code would regulate the part that had remained the same — the form of the building and the configuration of the street and sidewalk. Use would be regulated, too, but at a secondary, rather than primary level of the code.

In some cities, planners have found ways to bend land-use zoning to enable this kind of reuse to promote the revitalization of older neighborhoods, particularly those with good architectural "bones." But such modifications are typically made on a case-by-case basis or within narrowly defined special districts.

Meanwhile, in new growth areas and in most existing neighborhoods, use-based zoning remains the law of the land. One result is the suburbanization of city neighborhoods by provisions such as setback rules that force houses far back on their lots and away from each other.

Getting down to work

Generally, the creation of a form-based code is interwoven with a community visioning process. The process typically includes a public design workshop, or charette, lasting several days. The community's "consensus vision" is conveyed through a range of visuals, including perspective drawings, site analysis diagrams, and an illustrative plan. That plan, which resembles an aerial photo, includes proposed buildings (shown as rooftops), key natural features, and existing and planned public spaces.

The first step in coding is to translate the illustrative plan into a more diagrammatic regulating plan, which indicates what goes where. This document, while similar in some ways to a zoning map, is far more detailed. It also omits any direct labeling of uses, a job that is handled in the building standards described below.

In one kind of form-based code, the regulating plan assigns a building type or types to each available parcel of land. Other kinds of regulating plans indicate a range of building or frontage types that may be constructed in a certain area.

Clearly, when it comes to detailing the urban environment, one size does not fit all, and the new approach to coding recognizes that. Coding by building type provides the freedom to create one set of rules for one building type and another set for a different type. For example, a townhouse may function best with its main floor lifted a half-level above grade for interior privacy, with a front stoop for access. Yet a shopfront in the same neighborhood may be more accessible to customers if it is set at grade.

Although public buildings are very important to New Urbanist designers, they are typically not coded.

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Nuts and bolts

The physical characteristics of each building type are summarized in the building standards — a set of annotated building cross-sections and plan diagrams assembled on a single, letter-size sheet. In some cases, all the building types are combined into a matrix and formatted as a poster.

Regardless of layout, building standards typically establish these parameters:

Building height is a key standard. A maximum number of floors (or dimension-to-the-eave) is set to ensure that a building does not overwhelm its neighbors. Unlike use-based zoning, form-based codes also specify a minimum height in order to maintain a proper street wall.

Siting standards control the placement of structures in relation to fronting streets and adjacent building lots. Dimensions to front, side, and rear building lines, as well as the location and configuration of entrances, parking, yards, and courtyards are specified. Key building elements — i.e., windows, doors, and porches — are also controlled by the standards.

Uses are also part of the building envelope standards, but the approach here is quite different from conventional zoning. Permissible uses, stated in general terms (e.g., retail, residential), are identified for each building type and labeled on the cross-section diagram.

This approach makes it easy to assign different uses to each floor of a mixed-use development, and avoids the problem of trying to communicate the same information on a flat map. (The plethora of colors, stripes, and cross-hatch patterns on most zoning maps shows how confusing this can be.)

Thoroughfare standards for a range of recommended street types may also be part of the code in places where streets are not individually designed. Such standards are indicated by section diagrams with dimensions for travel and parking lanes, sidewalks, medians, and planting strips. Tree alignment and property lines are also shown.

Finally, many codes include a set of landscape standards listing appropriate tree and groundcover species. Most codes also provide a glossary that defines terms that are used in a specific way in the document.

These components constitute the basics of a form-based code. They control the urban design elements that New Urbanists are most concerned with. However, some communities — master-planned developments, special retail districts, historic districts, among others — may want to exercise a higher level of control over the appearance of individual buildings. For this reason, some form-based codes include architectural standards.

This optional "dress code" controls exterior colors, materials, and construction techniques. Particular emphasis is given to cladding, doors, windows, stairs, and roofs. Style may also be included as part of the architectural standards, but not in every case. Many New Urbanists choose to avoid direct references to building style, fearing that too much specificity will lead to an overly homogeneous, "themed" look.

A little history

While the term form-based coding has only recently emerged, the technique has been used for over 20 years. Andres Duany's Miami firm, Duany Plater-Zyberk & Company, first applied the approach in its 1982 code for Seaside, the highly publicized coastal resort town on Florida's panhandle.

The firm's principals, Duany and his wife, Elizabeth Plater-Zyberk, initially set out to design all the town's buildings themselves. But once the true scale of the project became evident, they realized that such a high level of design control would not be possible, or even desirable. Instead, they handed off the design responsibility to the lot purchasers, or their architects. That decision led to a new challenge — finding a way to impart a distinctive character to specific areas within the development.

On study trips to historic Southern communities, the design team saw that certain building types tended to dominate in certain parts of a town: shopfronts on the main square, rowhouses on side streets, and mansions flanking Main Street just beyond the edges of the downtown. The team also noted that, while building types were fairly consistent in a given area, there was always enough variety within the design of each building to avoid a cookie-cutter look.

The first Seaside code established a hierarchy of seven (later expanded to eight) "classes" of buildings for use in the new community. Each class was based on a traditional Southern vernacular building type. The code specified the rudimentary physical characteristics of each class, controlling siting on the lot, building height, location of porches and outbuildings, and how parking should be handled.

The code progressed through a number of iterations, achieving its near-final form during an on-site design charette in 1981. Shortly after that event, several architecture professors at Washington, D.C.'s Catholic University conducted a test of the code. They asked 140 students to design and build models of every building included in the 80-acre master plan according to the rules set forth in the code. The students then combined their individual creations into a 16-foot-long composite model of the community.

Looking at the finished product, one could easily envision the town's streets and public spaces. The model also assumed an important diagnostic role. Recognizing the tendency of architecture students to push the design of each building to its limits, the code's creators were able to identify and fix a number of potential regulatory problems before the code was formally adopted.

After the firm's experience at Seaside, Duany Plater-Zyberk adapted form-based codes to work within the legal framework of a planned-unit development. The Kentlands in Gaithersburg, Maryland, is one early example of that application. Since 1989, when its plan and code were created in a highly publicized charette, DPZ has crafted similar documents to regulate the buildout of over 200 new and existing communities.

Broadening the circle

Other urban designers have since used form-based codes in a wide variety of projects and locations. In 1999, Dover, Kohl & Partners of South Miami, working in collaboration with DPZ, prepared a master plan and form-based development ordinance for a new downtown for Kendall, an edge city just south of Miami. The 240-acre project site is adjacent to two commuter rail stations and a state

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Exhibit 6

Since the adoption of the ordinance, an estimated $250 million in new construction permits have been issued. Some 3,400 new dwelling units, most in high-rise buildings (up to 25 stories), are now under construction in an area that previously had no residential population at all. While the recent wave of construction in Kendall was foreseen well before the code was adopted, many credit the regulations with helping the community to achieve a true downtown development pattern rather than the patchwork typical of booming suburban areas.

On the East Coast, Dover Kohl and Ferrell Madden Associates of Washington, D.C., conducted an eight-day charette that resulted in the adoption in February 2003 of a plan and form-based code for the Columbia Pike Corridor in Arlington, Virginia. That work focused on the detailed design of four mixed-use centers along a 3.5-mile section of the historic corridor, which is minutes away from the Pentagon and downtown Washington.

A year later, Arlington County planners approved Columbia Station, a mixed-use development consisting of 257 housing units above 42,000 square feet of street-fronting retail. Future plans call for the integration of bus rapid transit or light rail along the corridor.

Geoffrey Ferrell of Ferrell Madden was also responsible for the form-based coding of a $200 million, mixed-use development in Contra Costa County, California. For two decades, neighborhood opposition had stalled the proposed public-private venture on a 20-acre site adjacent to the Pleasant Hill station on the Bay Area Rapid Transit line. The plan for this project was developed by Lennertz Coyle & Associates of Portland, Oregon.

The code, and the elaborate public involvement that led up to it, created a level of trust that led to approval of the project in December 2001. The project is now moving forward under the direction of architect Dan Parolek, of Opticos Design in Berkeley, California.

Stephen Lawton, the community development director of Hercules, another Contra Costa County community, credits the streamlined nature of form-based coding with helping the city to deal with a backlog of development proposals. Dover Kohl & Partners' Central Hercules plan is shaping several new mixed-use neighborhoods on a patchwork of brownfield sites.

Says Lawton: "The clarity of the form-based code made it easy for citizens to understand the development proposals and to accept the intensity of growth needed to achieve financial stability. This was something we'd never have been able to achieve with conventional zoning."

To date, most form-based codes have been crafted individually in response to the needs of a specific community or site. Now comes a new generation of standardized form-based codes, which are derived from the SmartCode, a template developed by DPZ and licensed by the Municipal Code Corporation in Tallahassee, Florida.

The SmartCode template defines a series of preconfigured (but customizable) zones based on the "transect" — a framework for organizing a metropolitan area into a series of zones, ranging from most natural to most urban.

One of the first communities to take this new approach is Petaluma, California, which adopted a variation of the SmartCode in July 2003. Laura Hall of Fisher & Hall Urban Design in Santa Rosa and Paul Crawford, FAICP, of Crawford Multari & Clark in San Luis Obispo tailored the document to the city's needs; it focuses on a 400-acre portion of the downtown.

According to Hall, Petaluma adopted the code in just nine months, after a seven-year effort to complete and adopt a more conventional, use-based downtown plan and zoning ordinance. Over $100 million in development has been approved since the code's adoption, she says.

California out front

As more communities begin to incorporate New Urbanist and smart growth principles into their planning strategies, the practice of form-based coding is likely to spread.

How much that will happen depends on several factors: the availability of qualified consultants (just a handful of firms practice true form-based coding); the dissemination of knowledge about the technique (little has been written on the subject, and there are few places to learn about it); and a continuing legal concern about overly prescriptive design guidelines that are often mistaken for form-based codes.

The good news is that the state of California recently included an endorsement of form-based coding in its general plan guidelines. The document refers to the code as a "useful implementation measure for achieving certain general plan goals, such as walkable neighborhoods and mixed-use and transit-oriented development." And this summer, Gov. Arnold Schwarzenegger signed Assembly Bill 1268, making California the first state to specifically enable the practice of form-based development regulation.

The bill's language is brief and to the point: "The text and diagrams in the land use element [of the general plan] that address the location and extent of land uses, and the zoning ordinances that implement these provisions, may also express community intentions regarding urban form and design. These expressions may differentiate neighborhoods, districts, and corridors, provide for a mixture of land uses and housing types within each, and provide specific measures for regulating relationships between buildings and outdoor public areas, including streets."

As states such as Florida and Arizona follow California's lead in mandating local planning through the use of a general plan, zoning consistent with the plan, and the use of specific plans, one can hope that the practice of form-based coding and the enabling laws that support it will not be far behind.

Peter Katz is a consultant on New Urbanist implementation and development who is based in Alexandria, Virginia. He teaches planning at Virginia Tech's Alexandria campus and is the author of The New Urbanism: Toward an Architecture of Community, *published by McGraw-Hill in 1993.*

FBCs: The Advantages

Because they are prescriptive (they state what you want), rather than proscriptive (what you don't want), FBCs can achieve a more predictable physical result. The elements controlled by FBCs are those that are most important to shaping a high- quality built environment.

FBCs encourage public participation because they allow citizens to *see* what will happen where — leading to a higher comfort level about greater density, for instance.

Because they can regulate development at the scale of an individual building or lot, FBCs encourage independent development by multiple property owners. This eliminates the need for large land assemblies and the megaprojects that are

Exhibit 6

The built results of FBCs often reflect a diversity of architecture, materials, uses, and ownership that can only come from the actions of many independent players operating within a communally agreed-upon vision and legal framework.

FBCs work well in established communities because they effectively define and codify a neighborhood's existing "DNA." Vernacular building types can be easily replicated, promoting infill that is compatible with surrounding structures.

Nonprofessionals find FBCs easier to use than conventional zoning ordinances because they are much shorter, more concise, and organized for visual access and readability. This feature makes it easier for nonplanners to determine whether the codes have been complied with.

FBCs obviate the need for design guidelines, which are difficult to apply consistently, offer too much room for subjective interpretation, and can be difficult to enforce. They also require less oversight by discretionary review bodies, leading to a less politicized planning process that can deliver huge savings in time and money and reduce the risk of takings challenges.

The stated purpose of FBCs is the shaping of a high-quality public realm (a presumed public good) that, in turn, promotes healthy civic interaction. For that reason, the codes can be enforced not on the basis of aesthetics but because noncompliance would diminish the good that is sought.

While enforceability of development regulations has not been a major problem in new growth areas where aesthetic concerns are usually addressed in private covenants, such matters have created problems for local governments in already-urbanized areas. Because they have the potential to level the regulatory playing field between city and suburb, form-based codes could play a major role in the recovery of vast areas of America's urban landscape.

Resources

Images: Top — In Iowa City's Peninsula Neighborhood, the code requires sidewalks and minimum-width front porches in a effort to create a pedestrian-friendly community. Photo by Paul Warchol. Middle — Townhouses in the Pleasant Hill development define the walls of a "public room" focused on Mount Diablo. Citizens supported the redevelopment plan in part becauseof the generous provisions of open space. Illustration by LCA Associates. Bottom — The row of storefronts, with lofts above, seen in the computer simulation, shows the results of following an FBC's build-to line in a Chicago neighborhood. Illustration by Urban Advantage.

On the web: For more information on form-based codes, go to **www.formbasedcodes.org**. This website has been created by FBCA, an alliance of form-based coding practitioners recently convened to set standards for and disseminate information about the technique.

Reading: Examples of early form-based codes can be found in *The New Urbanism: Toward an Architecture of Community* by Peter Katz (McGraw-Hill 1993) on pages 76-77, 94, 110-116, 141.

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