



Residential Street Rebuild Program (RSRP) Bond 2016 Rebuild Project



Council Presentation
February 28, 2017



Corpus Christi's Street Network

(March 31, 2015)



- **Total Street System - 1,234 Miles**
 - 172 Miles Arterial Streets (14%)
 - 210 Miles Collector Streets (17%)
 - 852 Miles Residential/Local Streets & Alleys (69%)
- **2010 - Overall Condition of Street System**
 - 20.3M Square Yards (SY) Total System
 - Approximately 50% of System in "Poor" Condition
 - Estimated Cost to Repair All Streets to "Good" - \$ 967M
 - ✓ \$469M for Residential /Local in "Poor" Condition (5.7M SY)
 - ✓ \$368M for Arterial / Collector in "Poor" Condition (3.8M SY)
 - ✓ \$ 23M for Alleys in "Poor" Condition (0.3M SY)
 - Condition Result of 30 Years of Neglect
- **2014 - Current Estimate for Residential/Local Reconstruction**
 - Estimated Cost to Repair to "Good" Condition - \$881M (7.8M SY) (June 17, 2014)
 - \$125/SY (Reconstruction); \$80/SY (Rehabilitation)

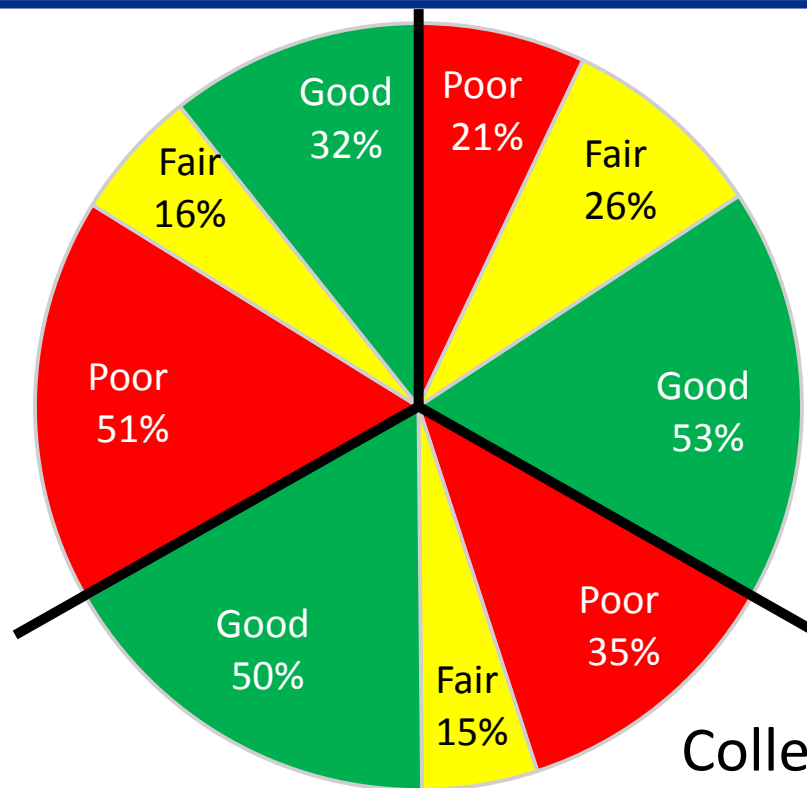


City Street Network Condition (Total 20M Square Yards)



Local

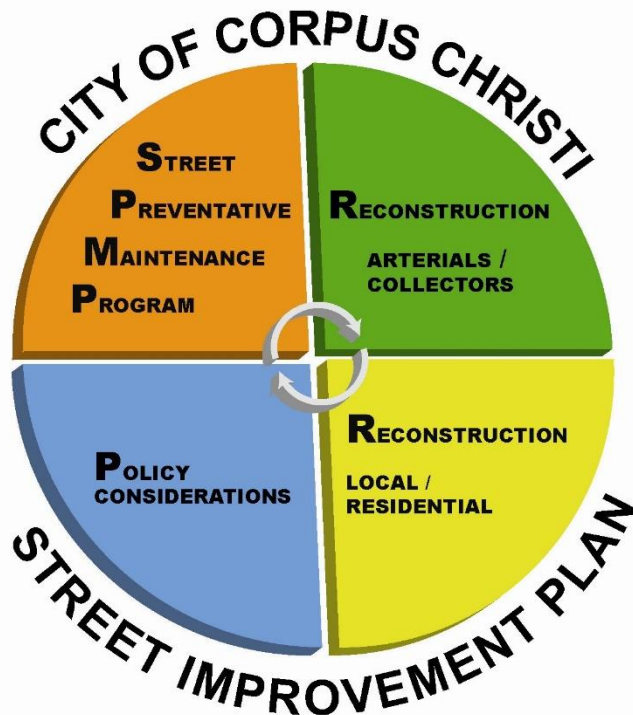
Arterial



Collector



Street Improvement Plan (Originated 2012)



- **Street Preventative Maintenance Program (SPMP)**
 - All (Residential, Collector & Arterial) streets maintained
 - Preventative maintenance on all streets in GOOD condition
 - Primarily funded through SMF
- **Arterial & Collector Reconstruction**
 - Rebuild non-residential streets in POOR condition
 - Funded through Bonds
- **Local/Residential Reconstruction**
 - Test Projects for current costing
 - Bond 2016 Project (\$11M)
 - No dedicated funding source identified
- **Policy Considerations**
 - Street design standards (from 20 to 30 year lifecycle)
 - Street cut policies



Street Improvement Plan (SIP)

Current Funding



- **FY17 STREET FUND (No. 1041) - \$29.2M TOTAL**
 - \$13.5M - Operations
 - ✓ General Fund
 - \$15.7M - SPMP
 - ✓ Street Fee
 - ✓ RTA
 - ✓ General Fund
- **FY16 - STREET FUND**
 - Began adding \$450K in Industrial District Revenue to Street Fund

➤ POLICY CONSIDERATIONS

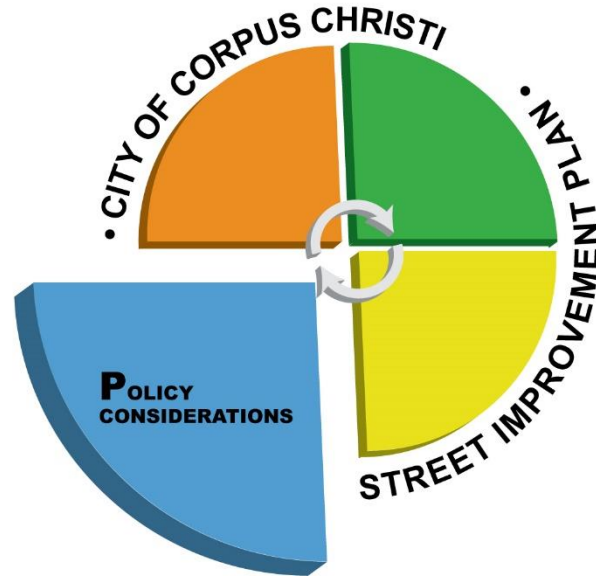


- **EVERY 2 - 4 YEARS BOND PROGRAM**
 - 2012 Prop 1 \$55M
 - Prop 8 \$ 8.4M
 - 2014 Prop 1 \$55M
 - Prop 2 \$45M

- **FY15 - FY17 STREET CAPITAL FUND (No. 1042)**
 - ✓ \$1M/YR from GF
- **FY16 STREET CAPITAL FUND**
 - ✓ Begin \$440K/YR from Industrial District
- **FY21 - FY22 STREET CAPITAL FUND**
 - ✓ Begin incremental 1/3% from GF
- **FY23 Forward - STREET CAPITAL FUND**
 - ✓ Begin 1% from GF
- **\$13.5M Accumulated Over 10 Years**
- **BOND 2016 ADD 1-TIME \$11 PROGRAM**

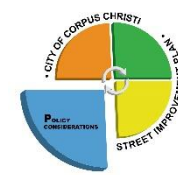


Street Improvement Plan





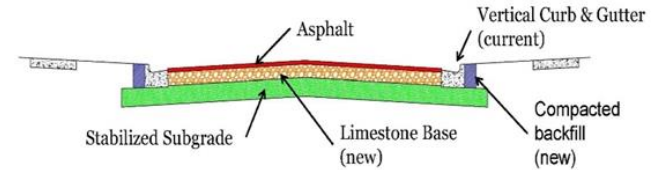
Policy Changes



➤ Design standards for street construction set to a **30 year lifecycle**.

○ Design Addresses the Following:

- ✓ Soil Conditions (Subgrade)
- ✓ Traffic Counts and Type
- ✓ Utility Depths and Locations
- ✓ Drainage (Surface Flow, Ditches, Underground Conveyance, etc.)
- ✓ Lifecycle Cost Analysis
- ✓ Market Conditions (Material Availability)



➤ Street Cut Policy

- To reduce the number of street cuts
- Requires larger patch/repair areas on cuts



Residential Street Rebuild Program (RSRP)



Program Development Discussion



Residential Street Rebuild Program (RSRP) Bond 2016 - \$11.0M Residential Street Rebuild Project



Bond Ordinance language: "...for the purpose of making permanent public improvements or for other public purposes, to wit: **designing**, constructing, renovating, improving, constructing (sic), reconstructing, restructuring and extending streets and thoroughfares and related land and right-of-way (including pedestrian and bike traffic lanes), sidewalks, streetscapes, collectors, **drainage**, landscape, signage, lighting, traffic signals (including networking hardware and software), acquiring lands and rights-of-way necessary thereto or incidental therewith (but **specifically excluding related City utility costs**, which are the responsibility of the City's utility system),..."

Bond 2016 Project	\$ 11,000,000
Design, Mgmnt, Inspection, Administration, etc. (20%)	(\$ 2,200,000)
Construction	\$ 8,800,000



Residential Street Rebuild Program (RSRP) Rebuild Options



➤ **RECONSTRUCTION –**

- ✓ Full depth treatment
- ✓ Construction of **new** pavement structure
- ✓ Complete removal & replacement of pavement surface and base w/subgrade stabilization
- ✓ Required when pavement structurally fails
- ✓ Limited replacement of curb & gutter, sidewalks, etc
- ✓ Limited utility work

➤ **REHABILITATION –**

- ✓ Limited treatment
- ✓ Resurface & rehabilitate **existing** roadway
- ✓ Partial recycling of existing pavement and/or base
- ✓ Restores structural serviceability & extends service life
- ✓ Minimal replacement of curb/gutter, sidewalks, etc
- ✓ Minimal utility work



Residential Street Rebuild Program (RSRP) Pavement Condition Index (PCI)

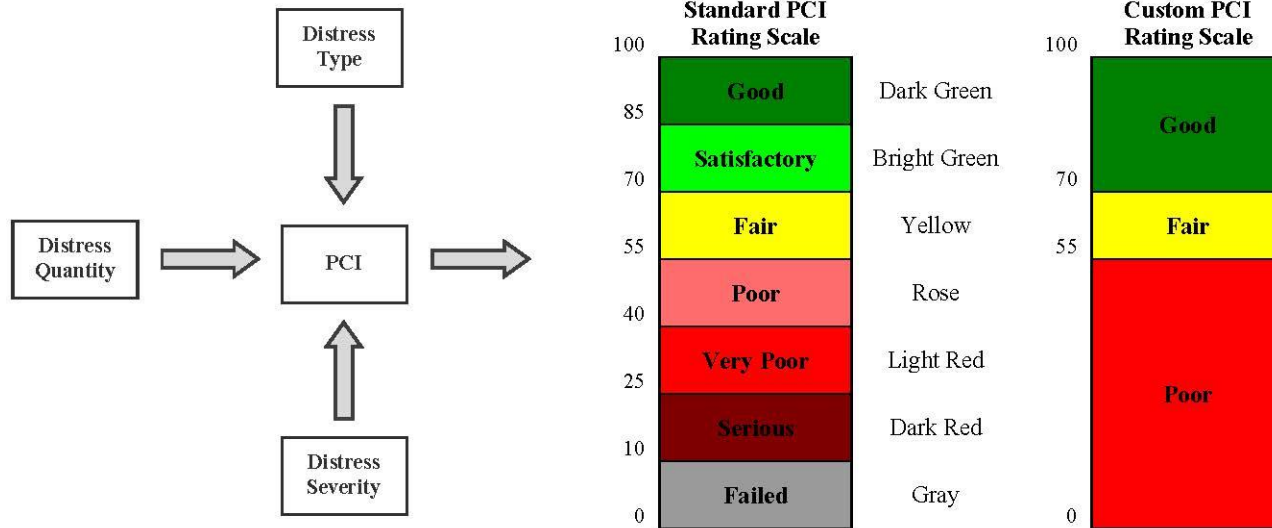


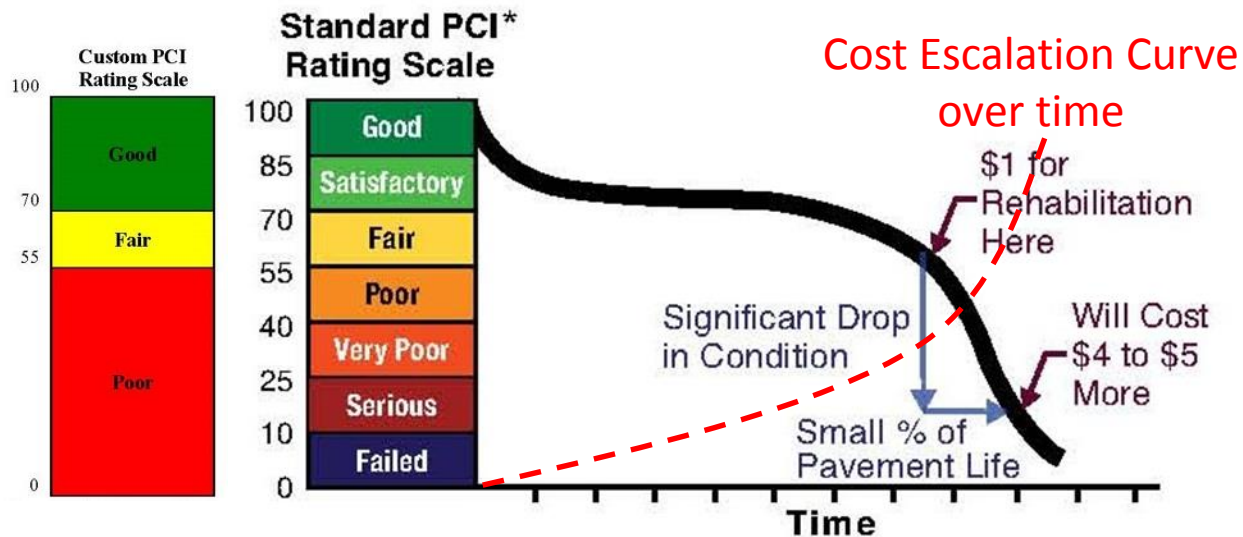
Figure 1: Pavement Condition Index (PCI) ranges may be customized and used for reporting analysis results.



PCI Degradation Curve



- Pavements should be managed, not simply maintained.



* PCI = Pavement Condition Index



Residential Street Rebuild Program (RSRP) Reconstruction / Rehabilitation



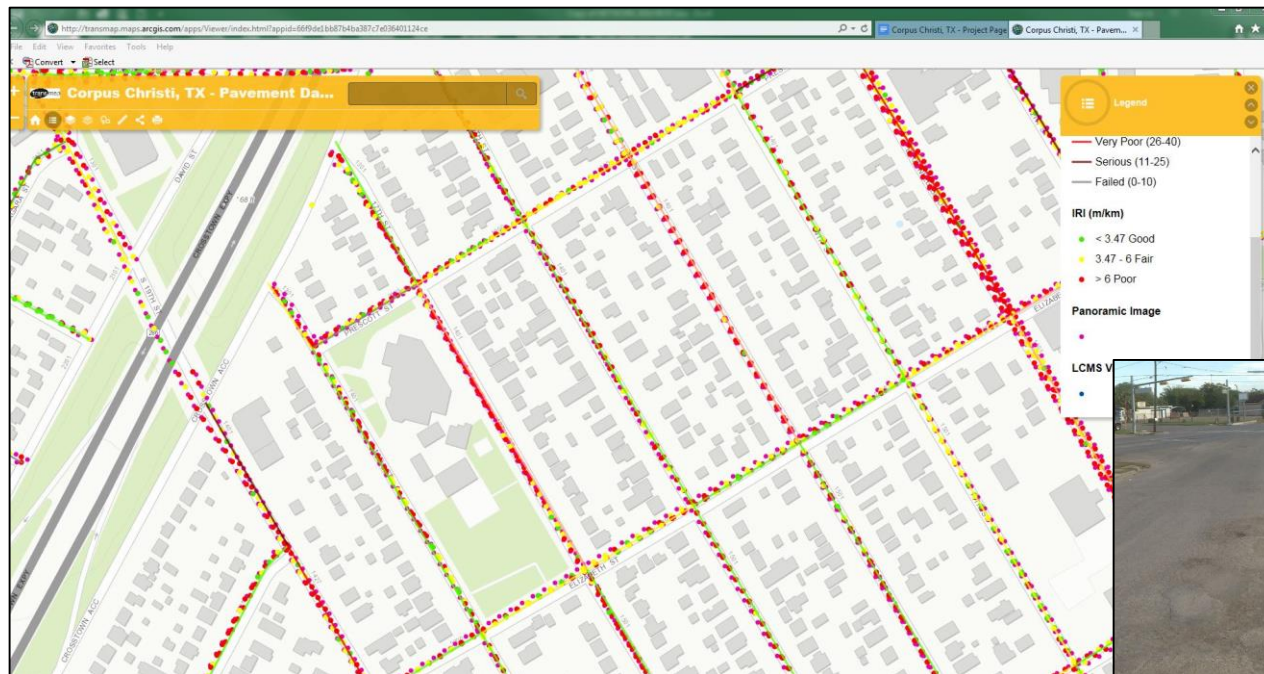
Ralston – Reconstruction Test Site



Indian Wells Court – Rehabilitation Candidate



Residential Street Rebuild Program (RSRP) TransMap Data





Residential Street Rebuild Program (RSRP) Bond 2016 Program Execution



RESIDENTIAL / LOCAL STREETS						Bond 2016	
						\$ 8.8M	
	Condition	PCI Range	Total SY	% of Total	Avg. PCI	Option 1 (SYs)	Option 2 (SYs)
RECONSTRUCTION	Failed	0 – 20	1,572,883	13%	12	35,200 [†]	
	Very Poor	21 – 35	1,634,446	13%	28		
REHABILITATE	Poor	36 – 55	3,053,278	25%	46	55,000 ^{††}	110,000 ^{††}
	Fair	56 – 70	2,003,030	16%	63		
	Good	>70	3,899,711	32%	84		
	Total		12,163,348		54	90,200	110,000*

[†]Based on \$125/SY and ^{††}\$80/SY

*Approximately 7.82 linear miles.

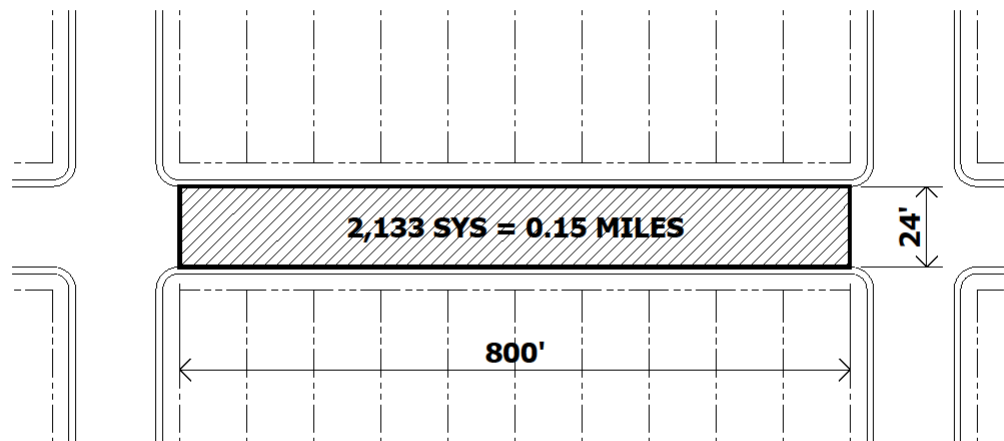


Residential Street Rebuild Program (RSRP)

Representation of Work Quantity



TYPICAL RESIDENTIAL STREET BLOCK SECTION



PAVEMENT QUANTITY

$(800 \times 24) \div 9 = \text{SQUARE YARDS (SYS)}$
2,133 = SYS
2,133 = 0.15 MILES

TYPICAL RESIDENTIAL BLOCK ≈ 0.15 MILES
7.82 MILES ≈ 52 TYPICAL RESIDENTIAL BLOCKS
5 DISTRICTS ≈ 10 RESIDENTIAL BLOCKS



Residential Street Rebuild Program (RSRP) Apportion Funds By District



	Square Yards						
District	Total Network	Residential/ Local	Res./Local PCI ≤ 55 "Current Need"	"Need" in Linear Miles	% of Total Need	SYs Worked†	Funding
1	5,191,722	2,803,734	1,471,697	105	24%	25,858	\$2,068,639
2	3,675,618	2,279,918	1,481,895	105	24%	26,037	\$2,082,973
3	3,262,808	2,009,174	1,099,588	78	18%	19,320	\$1,545,596
4	4,528,093	2,761,683	1,273,109	90	20%	22,369	\$1,789,500
5	3,696,021	2,308,838	934,318	66	15%	16,416	\$1,313,291
Total	20,354,262	12,163,348	6,260,607	445	100%	110,000*	\$8,800,000

†Based on \$80 / SY.

*Approximately 7.82 linear miles.



Residential Street Rebuild Program (RSRP) Street Selection Steps



Staff

- Select First on PCI score
- Identify Streets Removed From SPMP
- Distribute Based on District Need

A/E

- Perform Extensive Field Work
- Apply *Prioritization Criteria*
- Coordinate with Utilities
- Score Candidate Streets against *Matrix*
- Produce Final List for 2018 Work Plan



Residential Street Rebuild Program (RSRP) Evaluate & Prioritize Candidate Streets



RESIDENTIAL STREET REBUILD PRIORITIZATION MATRIX	
Criterion	High Rank Characteristic
Ridability*	Level of International Roughness Index (IRI)
Safety (Road Hazards)	Conditions causing vehicular damage
Proximity to Schools*	Closeness to a school
Developed Frontage*	Population count or number of improved lots (proxy)
Utility Conflicts*	Utility Department rank based on known conditions & costs
Street Functionality	Volume of traffic
Concrete Work	Extent to which concrete work is required

*Ad Hoc Residential Street Infrastructure Advisory Committee recommended criteria



Residential Street Rebuild Program (RSRP) Street Selection Matrix



CRITERIA		PRIORITIZATION ELEMENTS		
Description	Weight	Low	Medium	High
		1	2	3
Rideability	10 %	International Roughness Index (IRI): < 3.47 (m/km)	IRI 3.47 – 6	IRI > 6
Safety (Road Hazards)	10 %	No conditions that cause vehicular damage	One or two conditions that cause vehicular damage	Multiple conditions causing vehicular damage
Proximity to Schools	10 %	More than ¼ mile	1/10 th to ¼ mile	<= 1/10 th mile
Developed Frontage	10 %	Less than 20% developed	20% to 60% developed	More than 60% developed
Utility Conflicts	25 %	Significant utility work	Minor utility work	No utility work
Street Functionality	10 %	Low volume traffic (ie, deadend streets)	Moderate traffic volume	High volume traffic
Concrete Work (Sidewalks, curb & gutter, driveways)	25 %	Significant concrete work	Moderate concrete work	Minor concrete work
	100%			



Residential Street Rebuild Program (RSRP)

Key Dates



BOND 2016 RESIDENTIAL REBUILD TIMELINE																															
	2016			2017												2018												2019			
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
RFQ - Design Firms																															
Planning																															
Presentation to Council																															
Approval - Selection Process																															
Award AE Contract																															
2018 Work Plan Development																															
Approval - Work Plan																															
Design																															
Bid																															
Construction																															



Residential Street Rebuild Program (RSRP)



Discussion