

**Ronald Wastewater District - Sanitary Sewer Rehabilitation**  
**Project Summary: 2009 CIP (09-C)**

**Neighborhood:** Richmond Beach, Briarcrest

**Permits:** City of Shoreline Right-of-Way Permit

**Project Areas:** NE 146<sup>th</sup> between 17<sup>th</sup> Ave NE and 20<sup>th</sup> Ave NE  
Richmond Beach Dr NW between NW 192<sup>nd</sup> PI and NW 191<sup>st</sup> PI  
NW 192<sup>nd</sup> PI between Richmond Beach Dr NW and 23<sup>rd</sup> Ave NW

**Condition Assessment:** Through the District's ongoing maintenance, TV inspection personnel assess the entire system once every six to eight years, noting the various types and severity of defects in the sewer mainlines. Pipe segments in the 2009 CIP were selected for replacement due to root intrusion, pulled joints, and evidence of infiltration and inflow (I/I).

**Cost/Construction:**

Engineer's Estimate: \$660,590

Contractor's Bid Price: \$509,200

Change Order: \$38,036.13

Final Construction Cost: \$546,119.40

Cost per lineal foot main line: \$317.33 per LF

Engineer: Scott Christensen, P.E., Kristen White, CHS Engineers, LLC

Inspector: David Jensen, CHS Engineers

Contractor: Landis & Landis Construction, LLC

Notes: Flowing silt at Richmond Beach Dr NW and NW 191<sup>st</sup> PI

**Replacement/Rehabilitation:**

8" Concrete Sanitary Sewer Pipeburst with 8" HDPE: 1,403 LF

10" Concrete Sanitary Sewer Pipeburst with 10" HDPE: 318 LF

Manholes Replaced (48"): 4

Manholes Rehabilitated (Frame, Cover and Neck): 2

Manholes Rehabilitated (Neck Only): 1

Cleanouts Installed: 36

Side Sewers Replaced (4" HDPE): 30

Side Sewers Replaced (6" HDPE): 0

Side Sewer Stubs Replaced (6" HDPE): 18

**Private Replacement/Participation:**

Number of private side sewers in project: 52

Number of property owners that signed up (signed ROE): 32

Number of side sewers not needing replacement (per video): 7

Number of side sewers not replaced due to cost constraints: 6

**Ronald Wastewater District - Sanitary Sewer Rehabilitation  
Project Summary: 2009 CIP (09-C)**

House #	Street	ROE	Old Material	New Material	Replacement		Size	Notes
					Side Sewer	Stub (to edge of R/W)		
14514	20 <sup>th</sup> Ave NE		Conc					SS to Park and Ride abandoned
1749	NE 146 <sup>th</sup> St	Y	Conc	HDPE	X		4"	SS replaced
1750	NE 146 <sup>th</sup> St	Y	Conc	HDPE	X		4"	SS replaced
1742	NE 146 <sup>th</sup> St	Y	Conc	HDPE	X		4"	Connected to ex. 4" Conc
1743	NE 146 <sup>th</sup> St		PVC	HDPE		X	6"	Two (2) 6" PVC SS's connected. Stub replaced with 6" HDPE
1741	NE 146 <sup>th</sup> St							
1738	NE 146 <sup>th</sup> St	Y	Conc	HDPE	X		4"	SS replaced
1739	NE 146 <sup>th</sup> St		Conc/PVC	HDPE		X	6"	Two (2) 6" PVC SS's connected. Stub replaced with 6" HDPE
1737	NE 146 <sup>th</sup> St							
1734	NE 146 <sup>th</sup> St		Conc	HDPE		X	4"	Stub connected to ex. 4" Conc
1733	NE 146 <sup>th</sup> St	Y	Conc	HDPE	X		4"	SS replaced
1728	NE 146 <sup>th</sup> St		Conc/PVC	HDPE		X	4", 6"	Stub connected to ex. 6" PVC
1729	NE 146 <sup>th</sup> St		PVC	HDPE		X	6"	Three (3) 6" PVC SS's connected. Stub connected to ex. 6" PVC
1727	NE 146 <sup>th</sup> St							
1725	NE 146 <sup>th</sup> St							
1726	NE 146 <sup>th</sup> St	Y	Conc	HDPE	X		4"	SS replaced
1715	NE 146 <sup>th</sup> St	Y	Conc	HDPE	X		4"	SS replaced
1721	NE 146 <sup>th</sup> St	Y	Conc	HDPE	X		4"	SS replaced
1716	NE 146 <sup>th</sup> St		Conc	HDPE		X	4", 6"	Stub connected to ex. 6" Conc
1710	NE 146 <sup>th</sup> St	Y	Conc/PVC/CI	HDPE/ABS	X		4"	SS replaced
1713	NE 146 <sup>th</sup> St	Y	Conc	HDPE	X		4"	SS replaced
14604	17 <sup>th</sup> Ave NE	Y	Unknown	HDPE	X		4"	SS replaced
1709	NE 146 <sup>th</sup> St	Y	Conc	HDPE	X		4"	SS replaced
19131	Richmond Beach Dr	Y	Unknown					Not replaced

**Ronald Wastewater District - Sanitary Sewer Rehabilitation  
Project Summary: 2009 CIP (09-C)**

House #	Street	ROE	Old Material	New Material	Replacement		Size	Notes
					Side Sewer	Stub (to edge of R/W)		
19120	Richmond Beach Dr	Y	Unknown	HDPE	X		6", 4"	SS connected with 19110
19110	Richmond Beach Dr	Y	Unknown	HDPE	X		6", 4"	SS connected with 19120. Mostly replaced then connected to ex. 4" Conc
19123	Richmond Beach Dr	Y	Unknown					Not replaced
19117	Richmond Beach Dr	Y	Unknown					Not replaced
19111	Richmond Beach Dr		PVC					Not replaced
2544	NW 191 <sup>st</sup> Pl	Y	PVC	HDPE		X	4"	Stub connected to ex. 4" PVC
19105	Richmond Beach Dr	Y	Unknown	HDPE	X		4"	SS replaced
19101	Richmond Beach Dr	Y	Unknown					Not replaced
19027	Richmond Beach Dr		Unknown					Not replaced
2543	NW 192 <sup>nd</sup> Pl	Y	Unknown	HDPE	X		4"	SS replaced
19200	Richmond Beach Dr	Y	Unknown	HDPE	X		4"	SS replaced
2533	NW 192 <sup>nd</sup> Pl		Unknown	HDPE		X	4"	Stub connected to ex. 4" Conc
2528	NW 192 <sup>nd</sup> Pl	Y	Unknown	HDPE	X		4"	SS replaced
2519	NW 192 <sup>nd</sup> Pl	Y	Unknown	HDPE	X		4"	Mostly replaced then connected to ex. 4" ABS
2526	NW 192 <sup>nd</sup> Pl	Y	Unknown	HDPE		X	4"	Stub connected to ex. 4" PVC
2515	NW 192 <sup>nd</sup> Pl		PVC/ABS	HDPE		X	4"	Stub connected to ex. 4" Conc
2522	NW 192 <sup>nd</sup> Pl		Unknown	HDPE		X	4", 6"	Stub connected to ex. 6" Conc
2511	NW 192 <sup>nd</sup> Pl		Conc/PVC	HDPE		X	4", 6"	Stub connected to ex. 6" PVC
2512	NW 192 <sup>nd</sup> Pl	Y	Conc	HDPE	X		4"	SS replaced
2509	NW 192 <sup>nd</sup> Pl	Y	Conc/PVC	HDPE		X	4"	Stub connected to ex. 4" PVC
2508	NW 192 <sup>nd</sup> Pl	Y	Unknown	HDPE	X		4"	SS replaced
2503	NW 192 <sup>nd</sup> Pl	Y	Conc	HDPE	X		4"	SS replaced
2502	NW 192 <sup>nd</sup> Pl	Y	Conc	HDPE	X		4"	SS replaced
19202	NW 192 <sup>nd</sup> Pl		Conc	PVC		X	4"	Stub connected to ex. 4" PVC

**Ronald Wastewater District - Sanitary Sewer Rehabilitation  
Project Summary: 2009 CIP (09-C)**

House #	Street	ROE	Old Material	New Material	Replacement		Size	Notes
					Side Sewer	Stub (to edge of R/W)		
2311	NW 192 <sup>nd</sup> PI	Y	Unknown	HDPE	X		4"	SS replaced
2303	NW 192 <sup>nd</sup> PI	Y	Unknown	HDPE	X		4"	Mostly replaced then connected to ex. 4" Conc
2310	NW 192 <sup>nd</sup> PI		Conc	HDPE	X		4"	SS replaced
2306	NW 192 <sup>nd</sup> PI	Y	Conc	HDPE	X		4"	SS replaced
19221	23 <sup>rd</sup> Ave NW		Conc	HDPE	X		4"	SS replaced