



LANDSCAPE PERFORMANCE SERIES

Richmond Canal Walk – Richmond, VA Methodology for Landscape Performance

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Environmental

- ***Eliminates sewer discharges, reducing overflows from an average of 32 occurrences a year to less than once a year, by installing a combined sewer overflow interceptor in the canal bed.***

Data acquired from the Richmond Department of Public Utilities Combined Sewer Overflow Monthly Reports and provided chart showing CSO points. Records report a complete elimination of sewer discharges from CSO points 7-10 along the Canal Walk over the last 2 years and an average occurrence of less than once per year. Pre-construction average overflow occurrences acquired from "RICHMOND PLACES KEY PIPELINE BENEATH TWO HISTORIC CANALS" By Andrew G. Wright, published in Engineering News-Record on September 8th, 1997. As a comparison, unimproved CSO point 6 adjacent to Canal Walk in Shokoe Bottom averages 66 occurrences annually.

Social

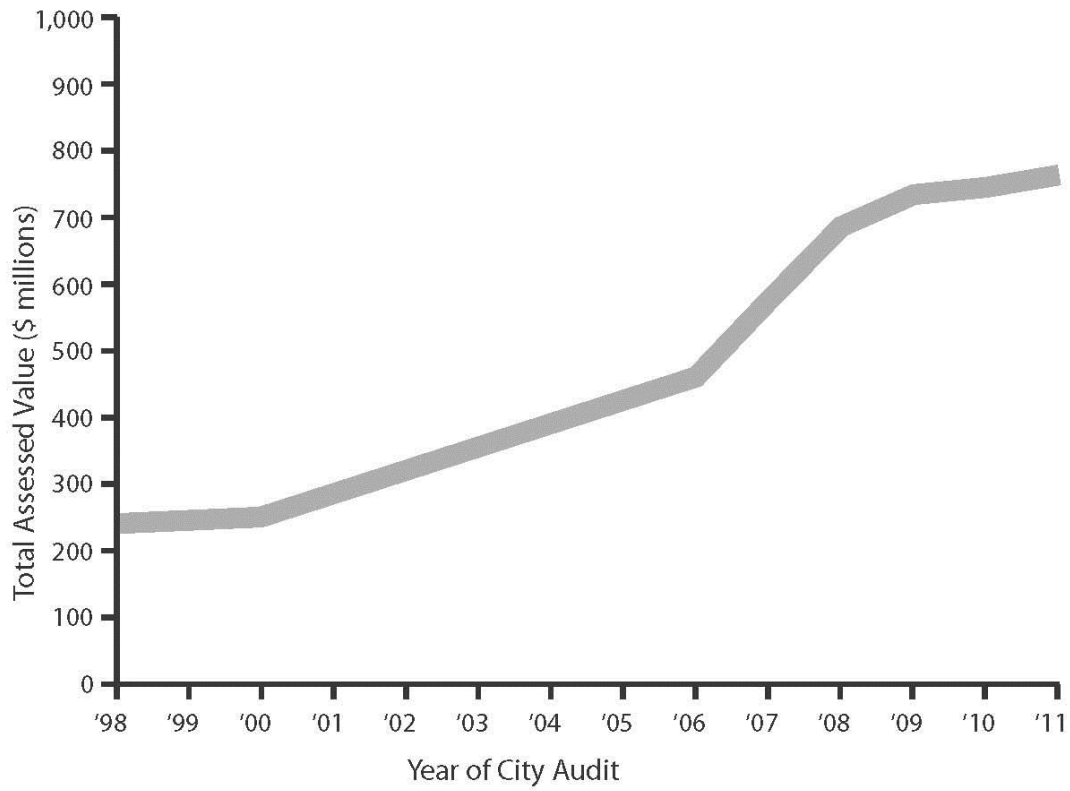
- ***Draws an average of 19,000 riders annually on the canal boat tours and chartered cruises. Remains an attraction for visitors to Richmond, with the majority interviewed visiting from out of town.***

Ticket sales acquired from Venture Richmond records show a continued increase in ridership from 2007 (17,967 riders) to 2010 (21,770 riders). A limited survey was conducted by Researcher, Michael Geffel, in mid-July, 2011. Of the 20 visitors interviewed, 11 responded that they were visiting Richmond from out of town.

Economic

- ***Encouraged private sector development, nearly tripling the total assessed value of the Riverfront District from \$242 million in 1998 to \$722 million as of 2011.***

Land and improvement values of parcels within the Riverfront Redevelopment District were acquired from the City Auditor for each year in 1998, 2000 and 2006-2011. The Total Assessed Value was calculated by adding together the land and improvement values of all parcels in the district with the exception of the Virginia Housing and Development Authority, the Virginia War Memorial and the Federal Reserve which did not have available values at the time of this report. In 1998 there were 35 parcels owned by 11 parties in the Riverfront District, worth a combined \$242 million by the city auditor. These large land holdings were subdivided into 319 individual parcels by 2011 (largely reflecting new condo and office construction) and were worth a combined \$722 million at that time.



The Paul and Phyllis Galanti Education Center at the Virginia War Memorial was recently complete with an estimated investment of \$13.6 million, further raising the total assessed value beyond this report. The Federal Reserve Building existed prior to construction of the Canal Walk.

- **Catalyzed the construction of 1.8 million sf of mixed use space, including 750,000 sf of commercial space, nearly 200,000 sf of retail/restaurant /entertainment space, and 328 condos. This added 2,570 employees to the district.**

Venture Richmond tracked new investment, square footage, and jobs added to the Riverfront District from 1999-2011 based on developer accounts, including attractions (American Civil War Center, NPS Civil War Visitors Center, & Va. War Memorial expansion) and investment adjacent to the Canal Walk.

| <u>New Construction</u> | | Total Sq Ft | Commercial | Retail | Residential | Employees |
|---------------------------|-------------|------------------|----------------|----------------|------------------|--------------|
| Turning Basin Building | 2001 | 95,000 | | 9,500 | | |
| Dominion Energy | 2003 | 50,000 | 50,000 | | | 350 |
| Lady Bird Hat Factory | 2007 | 50,000 | 17,000 | 33,000 | | 100 |
| Riverside on the James | 2005 | 719,000 | 230,000 | 70,000 | 122 | 545 |
| Vistas on the James | 2007 | 311,782 | | 4,576 | 168 | |
| MWV Headquarters | 2009 | 340,600 | 340,600 | | | 1,000 |
| Virginia War Memorial | 2010 | 17,300 | | | | |
| American Civil War Center | 2004 | | | | | |
| NPS Civil War Center | 2000 | | | | | |
| Canal Crossing Building | 2003 | 108,000 | 88,000 | 20,000 | | 475 |
| Watkins Cottrell Building | 2004 | 98,000 | 25,000 | 55,000 | | 100 |
| Cobblestone Commons | 2010 | 39,331 | | | 38 | |
| <i>Reynold's North</i> | <i>2014</i> | | | <i>9,000</i> | <i>216</i> | |
| <i>Canal Station</i> | <i>2014</i> | | | <i>15,000</i> | <i>72</i> | |
| Total | | 1,829,013 | 750,600 | 192,076 | 328 units | 2,570 |

- **Continues to attract new developments through the downturn in the housing market, with \$40 million of additional investment planned over 2011-2014.**

Acquired from developer estimates, a projected investment of \$40 million is planned for the redevelopment of the 6 acre Reynolds Aluminum Factory, the last sizable site in the redevelopment district. A description and rendering of the mixed use Reynolds North and Canal Station developments can be found in "Waterway Innovations," Grid Magazine #1, Summer 2009.

- **Saved an estimated \$33,500 in material costs by recovering and reusing more than 550 tons of historic canal stone along the 2,240 linear feet of coping.**

According to WRT records, the stone coping at the canal edge is made of re-used stones from the walls of the James River and Kanawha Canal that were stockpiled during the abandonment and re-grading. Material reduction benefits were calculated based on an average stone section of 18" x 24" and a weight of 165 lbs/cubic foot.

| | |
|----------------------------------------|------------------|
| Length of coping: | 2240 linear feet |
| Cubic feet of stone: 18" x 24" x 2240' | 6720 cubic feet |
| Weight of stone: 6720 cf x 165 lbs | 1,108,800 lbs |
| Weight of stone (tons): 1108800/2000 | 554.4 tons |

Salvaged stone from the historic canal walls required additional labor to sort and stockpile during deconstruction, but reduced material costs by an estimated \$33,600 or \$60/ton. Material savings estimates according to WRT records of \$15 per linear feet of coping after salvage labor.

| | |
|-----------------------------------|------------------|
| Length of coping: | 2240 linear feet |
| Cost Savings: 2240 x \$15 | \$33,600 |
| Cost Savings per Ton: 33600/554.4 | \$60.60 |

Cost Comparison Methodology

- Installing the EPA-mandated combined sewer overflow interceptor in the canal beds cost \$20 million alone, but was unlikely to add any further benefits to the Riverfront District. By restoring the Haxall and Kanawha Canals, and unifying the riverfront through the Canal Walk, an additional investment of \$26 million encouraged redevelopment in the district, increasing the total assessed value by \$480 million over the next 13 years.***

Costs of installation based on newspaper accounts and Venture Richmond interviews; methods of calculating the total assessed described above.