

Trex Fencing Case Study

Metro District Highlands Ranch HOA



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Parkway Fence Replacement Program Information

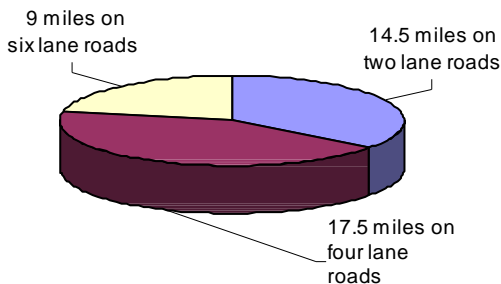
The Highlands Ranch Metro District owns and maintains over 41 miles of fence along major two, four and six lane roadways that serve as a backdrop to parkway landscaping in these areas. Some of these fences are over 20 years old and are in need of major repairs or replacement. In 2006, the Metro District began a process to develop a long term program to replace parkway fences as they reach their useful life and become less attractive and structurally sound. The planning process included identifying specific goals, major and minor issues, a complete inventory and condition ratings for existing fences, evaluating various fencing materials and designs, initial and ongoing costs and savings comparisons and developing a funding plan and replacement schedule.

The process has included a number of site visits and meetings with the Metro District Board of Directors and Advisory Board and is concluding with a Parkway Fence Replacement Program Public Information meeting on August 23, 2007. The Metro District Board is scheduled to consider the program for approval at their September 2007 regular meeting. Once the program is approved, implementation will begin later this year with the first replacement scheduled for Dad Clark Drive. Fence replacement will be phased over a twenty year period.

Goals

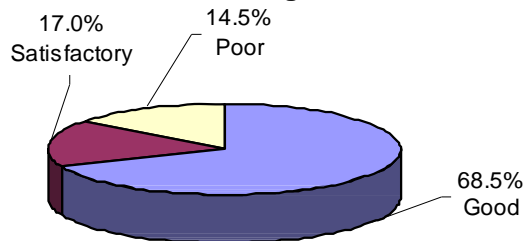
1. Inventory and rate the condition of all existing parkway fence.
2. Improve appearance.
3. Evaluate materials and designs.
4. Reduce maintenance costs and increase life of fence.
5. Develop a replacement schedule and funding plan.

Fence Inventory



4.3 miles or 10.5% of fence has masonry columns.

Condition Ratings



Ratings based on age, appearance and structural integrity.

Materials and Design Evaluation

- Considerations: appearance, life span, structural integrity, costs, construction logistics and utility conflicts.
- Materials evaluated: wood (cedar), polyethylene, polyvinylchloride (PVC), poly/wood composite (TREX), concrete, masonry.
- Installation costs vary from \$40 to \$300 per lineal foot of six foot high fence.

- Concrete not feasible due to utility conflicts and construction logistics.
- TREX is best product for our needs, application and budget and has 65% maintenance savings compared to cedar wood.
- Polyethylene columns are less expensive, as attractive and durable as masonry and have smaller “footprint” reducing utility conflicts.

Recommendations and Costs

- Use TREX product with polyethylene columns every 160’ on all two, four and six lane arterial roadways to add dimension, visual interest and to improve overall appearance.
- Total Cost \$15.85M over a twenty year period.



Funding

The Parkway Fence Replacement Program (PFRP) will be funded from the District’s Major Repair Fund (MRF). The MRF includes a variety of capital repair projects, including fence replacement, and is funded from several sources including annual General Fund transfers, interest income from fund balances, and mid-year tax distributions on new properties (HB1006 Funds). The District’s PFRP, as proposed, can be implemented without new or additional taxes.

Replacement Policies

The District plans to adopt several policies along with this program which include:

1. A requirement that all adjacent homeowner landscape that is impacting the fence is removed and/or retained by the owner before any replacement occurs.
2. A policy which would allow sub-HOA’s and organized neighborhoods to request substitute fences for purposes other than aesthetics.

Implementation

- 20 year program to begin in 2007 with replacement of fence on the north side of Dad Clark Drive.
- 2007-2016 Schedule of replacement is attached.
- 2017-2026 Schedule includes an equal amount of fence to be replaced each year until all fences are replaced. The location of these replacements will be determined by fence condition ratings conducted in future years.

For More Information: Visit www.highlandsranch.org or contact Brian Muller at 720-240- 5922 or bmuller@highlandsranch.org



Parkway Fence Replacement Program Schedule 2007 - 2026

- 2007 Dad Clark Drive from University Blvd. to Broadway (north side)
- 2008 HR Parkway from White Oak to Santa Fe Drive (both sides)
Venneford Ranch Road from University to HR Parkway (both sides)
- 2009 HR Parkway from Brookside Drive west to open space past Burntwood (north side)
HR Parkway from Longfellow to Burntwood Way (south side)
HR Parkway from Deer Creek Trail to White Oak (both sides)
- 2010 Quebec Street from Glenneagles Village to Silver Spur (west side)
HR Parkway from Montclair Drive west to open space at Middle Fork Trail (both sides)
- 2011 HR Parkway from Foothills Canyon west to the start of the Spring Gulch open space
HR Parkway from Ridgeglen Way to Broadway (north side)
HR Parkway from Lucent to Wildcat Reserve Parkway (both sides)
University from Dad Clark Drive to Venneford Ranch Road (west side)
- 2012 Broadway from HR Parkway to Wildcat Reserve Parkway (both sides)
- 2013 South Ranch Road (both sides)
Broadway from Dad Clark Drive to HR Parkway (east side)
- 2014 Cresthill Lane from University to Wildcat Reserve Parkway (both sides)
- 2015 Lincoln from Quebec to end of Highlands Ranch property
Quebec from Chestnut Hill to end of Highlands Ranch property (east side)
- 2016 University from Crosspointe Drive to Wildcat Reserve Parkway (both sides)
University from East Vista Trail to Colorado Blvd.
Dad Clark Drive from University to Broadway (south side)
The fence at Settler's Village
- 2017 – 2026 Remainder of Highlands Ranch fence

Parkway Fence Replacement Program



Parkway Fence Purpose and Scope

Purpose:

- Serve as an aesthetic backdrop for parkway landscape

Scope:

- Forty-one miles of five and six-foot fence along two, four and six lane arterial roadways

Note:

- Parkway fences are not intended to provide sound attenuation.

History and Background

- First ROW (Parkway) fence constructed in 1981 along Broadway and Dad Clark
- Original Fence - open style two-rail and low (30") solid



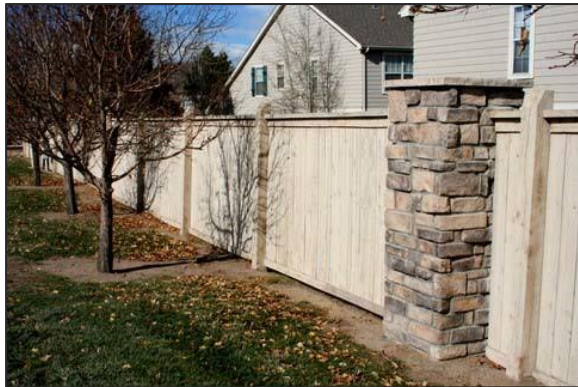
Fence Evolution

- Over next 25 years, several variations on fence style used
- 5' high solid fence
- 6' high solid fence
- Interior posts and exterior posts



[Other Variations]

- Open fence with steel rails
- Fence with masonry columns
- 8' high fence



[Public vs. Private]

- Some neighborhoods use different fence style to establish identity
- Falcon Hills, High Woods, Indigo Hills are maintained by HOA
- “Durable” enhancements, such as brick or masonry, are permitted for HRMD maintained fence
- Dune Gray standard color adopted in 1988

[Current Maintenance and Costs]

- Stain an average of 32,000 l.f./6 miles or 15% per year
- Fence post, picket, and stringer board replacement/repair as needed
- Accident and snow plowing damage repairs
- Annual costs - \$100k per year

[Major Issues]

- Aging fences not as attractive or structurally sound
- Damage by adjacent homeowner landscape
- Repair vs. replace aging fence
- Annual maintenance and staining costs
- Narrow or no landscaping in areas makes fence appearance more important
- Fence in no or narrow landscape areas degrades faster



[Minor Issues]

- Graffiti
- Damage from vehicle accidents
- Damage from snow plowing

Parkway Fence Replacement Program

GOALS

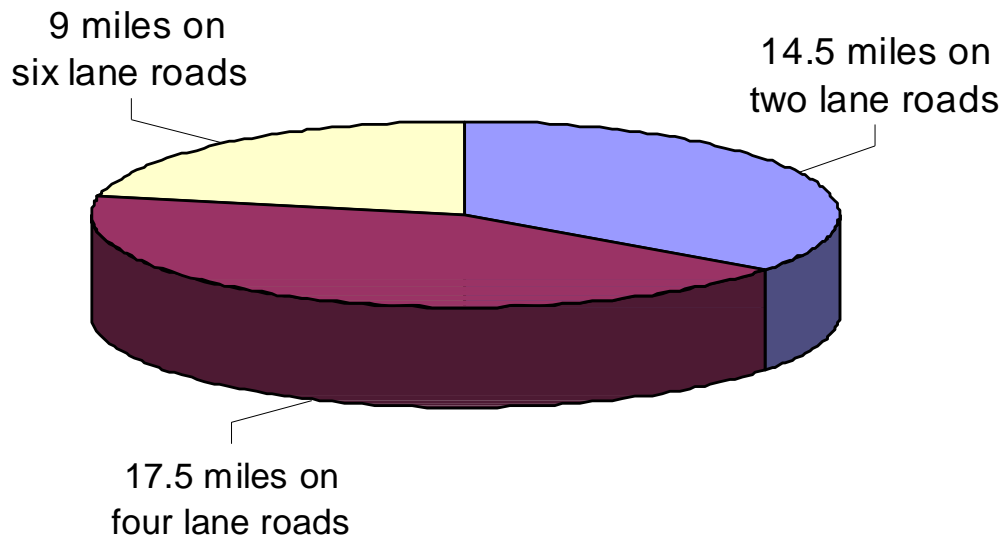
1. Inventory and rate condition of all existing fences
2. Improve appearance of parkway fence
3. Evaluate materials and design for fence replacements
4. Reduce maintenance costs and improve life of fence
5. Develop Fence Replacement Schedule and funding plan



Fence Inventory

Fence Inventory

41 Miles



Fence Inventory

Residential Information

Current homes in Highlands Ranch	28,588
Current apartments in Highlands Ranch	<u>3,305</u>
Total dwelling units	31,893
Homes adjacent to parkway fences	2,680
- 9.4% of homes	
- 8.4% of dwelling units	

Fence Inventory

Condition Rating Criteria

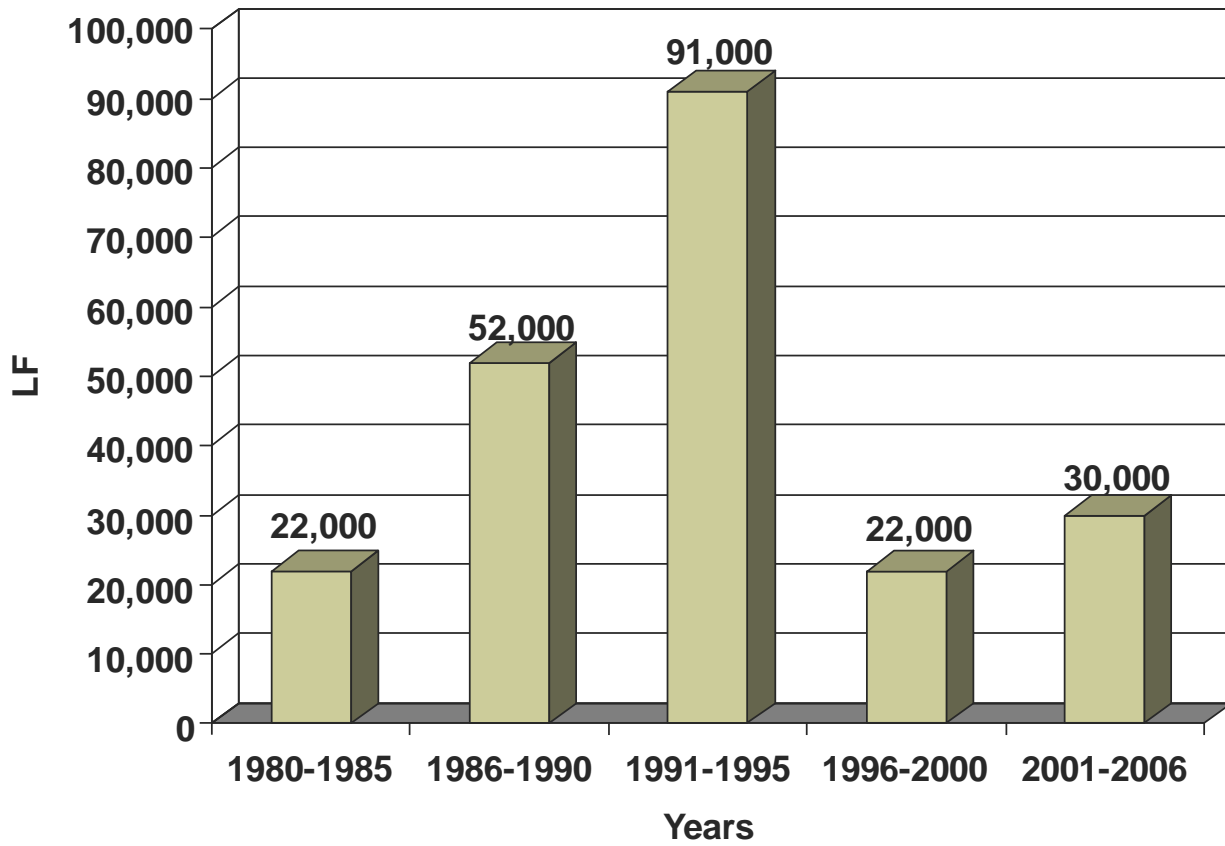
Based on:

- Age
- Appearance
- Structural integrity



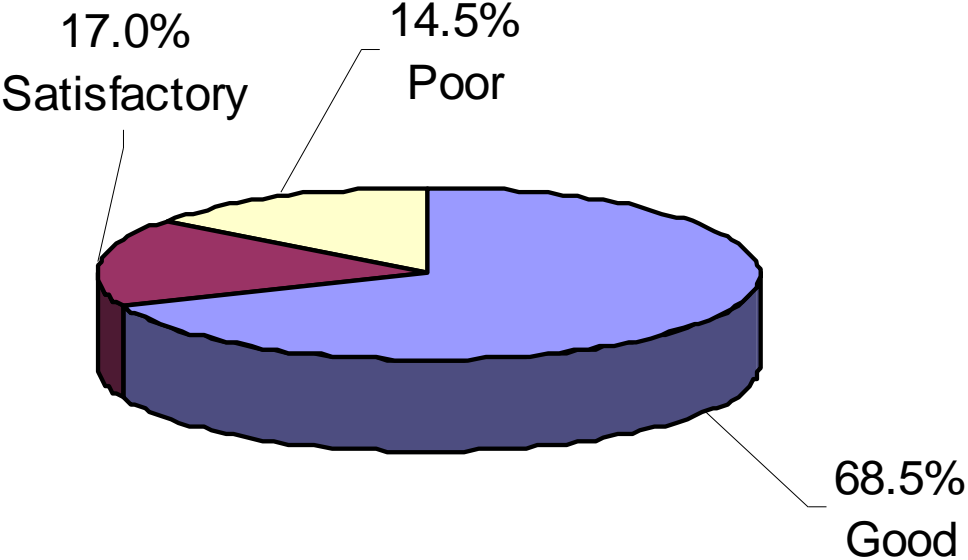
Fence Inventory

Fence Age



Fence Inventory

Condition Ratings



Fence Inventory

Existing Fence with Masonry Columns



Fence Inventory

Existing Fence with Masonry Columns

Broadway & Highlands Ranch Parkway	920 LF
Poston Parkway	8,371 LF
Flagstaff Way	850 LF
Spearwood Drive	816 LF
Wildcat Reserve Parkway at Stonebury	1,531 LF
The Hearth on McArthur Ranch Road	3,575 LF
Settler's Village	2,099 LF
University Blvd at White Bay	1,248 LF
Venneford Ranch Road- Timberline Sub-Division	<u>3,381 LF</u>
	22,791 LF

or 4.3 miles (10.5%)



Materials and Design Evaluation

Materials and Design Evaluation

Considerations

- Appearance
- Life span
- Structural integrity
- Installation and maintenance costs
- Construction logistics and utility conflicts

Materials and Design Evaluation

Materials Studied

Material	Source
Cedar wood*	Mother Nature
Polyethylene	Peak Fence
Poly-vinyl chloride – PVC	Buff Tech
Poly and wood composite	TREX
Concrete	Great Wall Systems
Masonry columns	brick or stone
Polyethylene columns	Landmark

*Current fence material

Materials and Design Evaluation

Fence Materials Studied

Cedar



Polyethylene



Poly-vinyl Chloride



Materials and Design Evaluation

Fence Materials Studied



Polyethylene-wood Composite - TREX



Concrete

Materials and Design Evaluation

Column Materials Studied



Poly



Masonry



Concrete

Materials and Design Evaluation

Fence Comparisons

	Wood	TREX	PEAK	Buff Tech	Great Wall
Initial Cost (lf)	\$38-\$40	\$45-\$48	\$43-\$46	\$43-\$46	\$98
40-Year Cost (lf)	\$148	\$104	\$104	\$104	\$110
Life	20 year	40 years	40 years	40 years	60+ years
Warranty	1 year	25 years	25 years	25 years	25 years
Strength	Sound thru 15 years	Sound thru 30+ years	Sound thru 30+ years	Sound thru 30+ years	Sound thru 60+ years
Maintenance	Minor repairs and staining	Graffiti may require replacing some components	None	None	Needs repainting every 15 years
Availability of Materials	Many sources available	Single source from national company	Single source from local company	Single source from national company	Single source from national company

Materials and Design Evaluation

Column Comparisons

	Masonry	Concrete	Polyethylene
Initial cost	\$1,500	\$1,000	\$600
40 yr. cost	\$1,500	\$1,063	\$1,200
Life	60+ years	60+ years	40 years
Warranty	25 years	25 years	25 years
Strength	60 + years	60 + years	40 years
Maintenance	None	Needs repainting every 15 years	None
Availability of Materials	Many	Single source from national company	Single source from national company

Materials and Design Evaluation

Significance of Fence in Landscaped Areas

No or Narrow Landscaped Areas



Materials and Design Evaluation

Significance of Fence in Landscaped Areas

Wide Landscaped Areas



Materials and Design Evaluation

Width of Parkway Landscaping

4/6 lane roads with 10' or less of landscape	19,800 lf	9%
4/6 lane roads with more than 10' of landscape	135,000 lf	62%
2 lane roads	61,600 lf	29%

Total: 216,400 lf



Materials and Design Evaluation

Findings

Concrete Fence

- Concrete fence is problematic and costly in wide landscape areas
- Transition to columns may be necessary to tie plastic and concrete fences together
- Visual impact of concrete fence lessens in wide landscaped areas
- Significant utility conflicts with concrete columns
- Concrete must be “stepped”



Materials and Design Evaluation

Findings

- TREX product is best for our needs, applications, and budget.
- 65% maintenance savings with TREX.
- TREX is a composite of recycled plastic and reclaimed wood .

Materials and Design Evaluation

Findings

- Polyethylene columns are:
 - less expensive than masonry columns
 - equally as attractive as masonry columns
 - forty-year cost comparable to masonry columns
 - smaller footprint reduces utility conflicts



Implementation and Funding

Implementation and Funding

Recommended Materials and Design



- **TREX Fence**
- **Polyethylene columns every 160 feet on all two, four, and six lane roads**

Implementation and Funding

Photo Enhancement



TREX with Polyethylene Columns



Implementation and Funding

Options and Costs

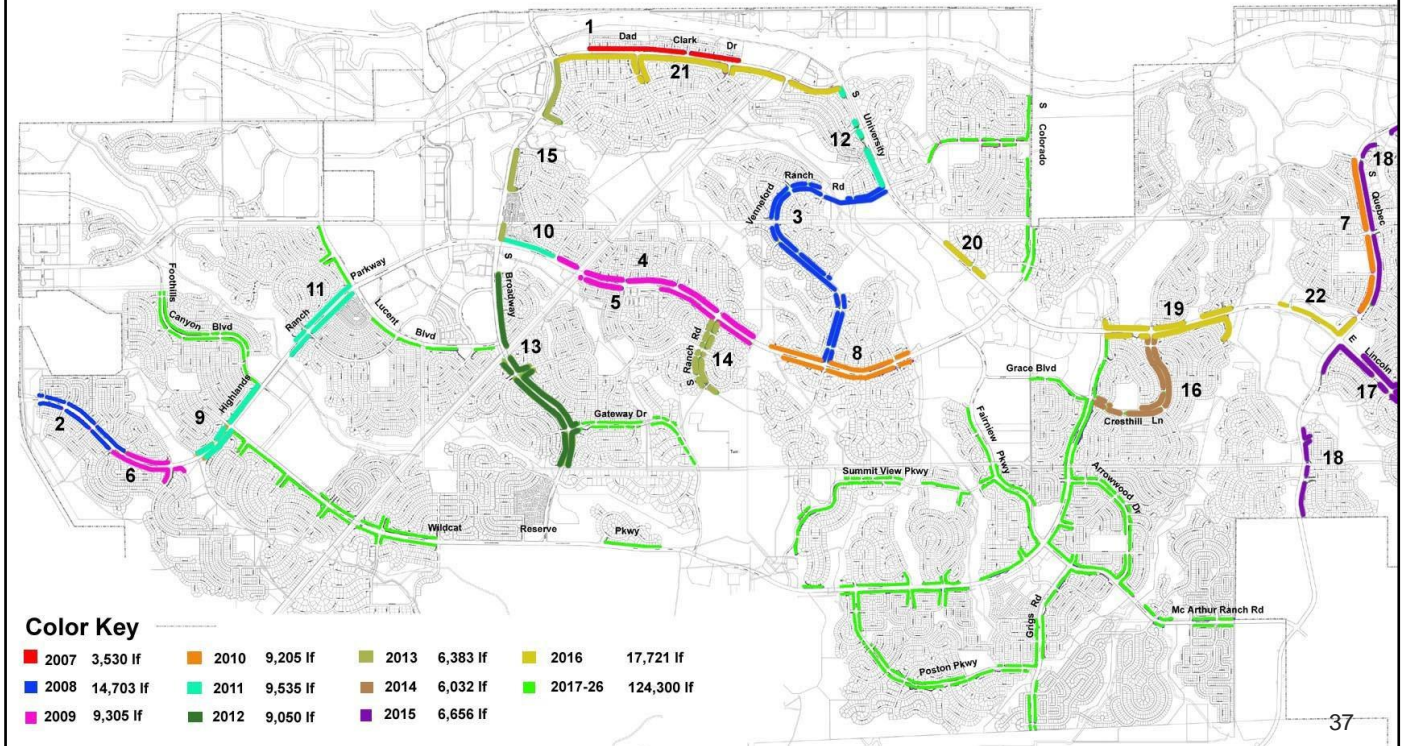
	Cost	Total
TREX	\$14,500,000	\$14,500,000
TREX + add columns everywhere	\$1,350,000	\$15,850,000

Note: Estimates do not include repair of landscape damaged during installation and traffic control.

Implementation and Funding

Replacement Schedule

Proposed Fence Replacement Schedule (2007-2026)
(216,400 lf)



Implementation and Funding

Funding from Major Repair Fund

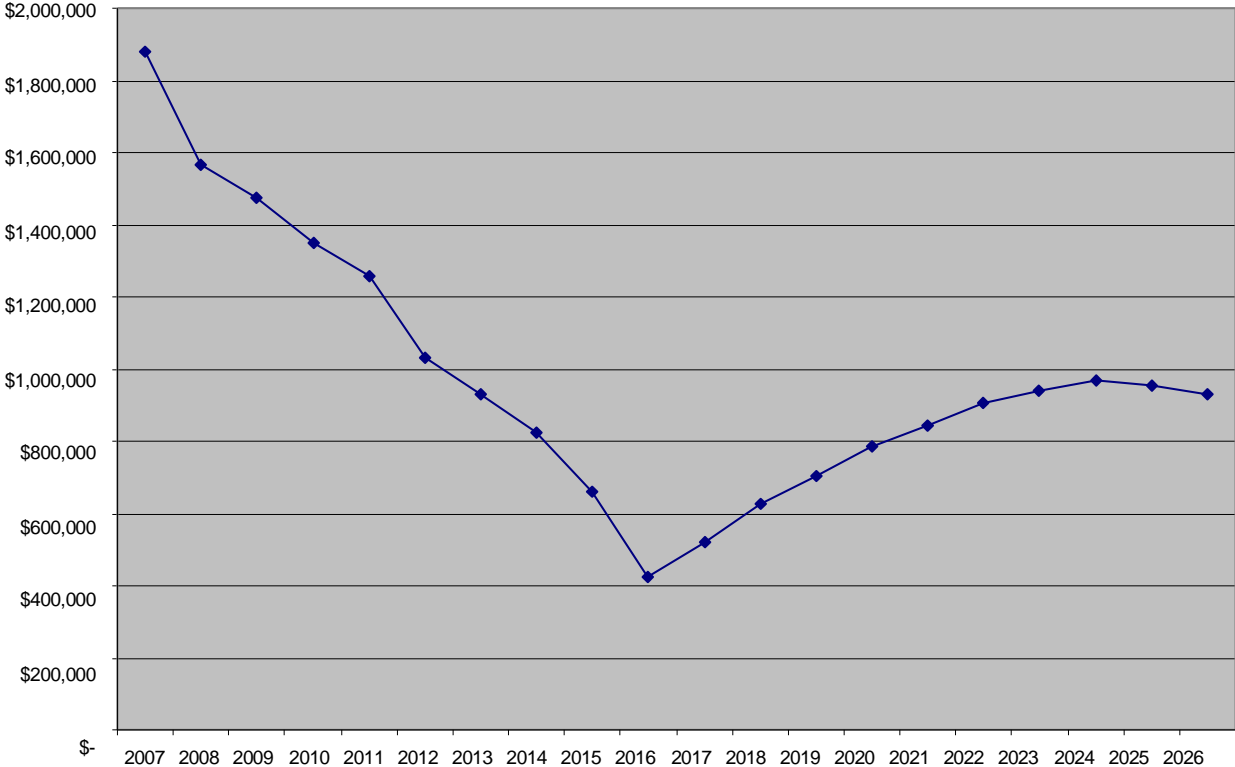
Assumptions:

- D \$450,000 annual General Fund contribution through 2015, plus interest and HB1006 revenues
- D One mil funding from General Fund from 2016 - 2026

Implementation and Funding

Major Repair Fund Balances

Major Repair Fund Ending Balance



Implementation and Funding

Adjacent Homeowner Landscape Retention/Repair

Recommended policy:

All adjacent homeowner landscaping and impacts to existing fence must be retained and repaired to the District's satisfaction before the District will proceed with any fence replacement. The cost for retaining or repairing adjacent residential landscape is the responsibility of the homeowner or HOA.



Implementation and Funding

HOA and Neighborhood Fence Substitution Requests

Recommended policy and criteria:

1. Proposed substitution must be for purposes other than aesthetics (i.e. sound attenuation).
2. Substitution must begin and end at logical points as determined by the Metro District.
3. The HOA or neighborhood must demonstrate the ability to fund and maintain the substituted fence.
4. The District may contribute to substitutions in an amount not to exceed the cost to install TREX with polyethylene columns.
5. All substitutions must be approved by the Metro District Board of Directors.

[Recommendations]

Adopt Parkway Fence Replacement Program to include:

- TREX with columns on all two, four, and six lane roads
- 20-year implementation: 2007 – 2026
- HOA/Neighborhood substitution policy
- Landscape retention/repair policy



For more information about Trex Fencing applications for homeowner and community associations, please contact

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