

Rent Lease Buy Decision Making

A Presentation at the

AEMP

**25th Management Conference &
Annual Meeting**

March 25-27, 2007
Corpus Christi, TX

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Methods of Acquiring Vehicles and Equipment

- Rent
- Lease
- Buy
- Beg
- Borrow
- Steal

Why rent?

- To meet emergency, seasonal, and other intermittent, unpredictable, and/or infrequent needs for vehicles or equipment cost effectively
- To obtain vehicles or equipment more quickly than may be possible if they are purchased or leased
- To obtain vehicles or equipment for which you cannot secure the funds needed to purchase or lease

Rent versus Own Decision Points

1. Can the asset be leased or rented locally?
2. Do you expect to use the asset more than once?
3. Do you expect to use the asset on a regular basis for more than six months?
4. Are there or will there be sufficient funds to purchase or lease the asset?
5. What is the average capital and operating cost per day, week, or month to own or lease the asset?
6. What is the cost per day, week, or month to rent the asset?
7. Which of these two costs is lower?

A Note on Terminology

- **Financing:** The method used to pay for the acquisition of an asset
- **Funding:** The amount of money required to acquire an asset under a particular financing method

Methods of Financing Vehicle and Equipment Acquisitions

- Ad hoc (i.e., year-to-year) allocations or appropriations of cash
- Accumulation of cash reserves in a fleet replacement fund, usually through the use of an internal leasing or replacement cost charge-back program
- Borrowing cash from financial institutions, including the financing units of vehicle manufacturers
- Borrowing cash from investors through the issuance of bonds
- Leasing from a leasing company, bank, or commercial finance company

Why is the type of capital financing you use important?

- Because year-over-year funding requirements can vary dramatically depending on the type of financing used

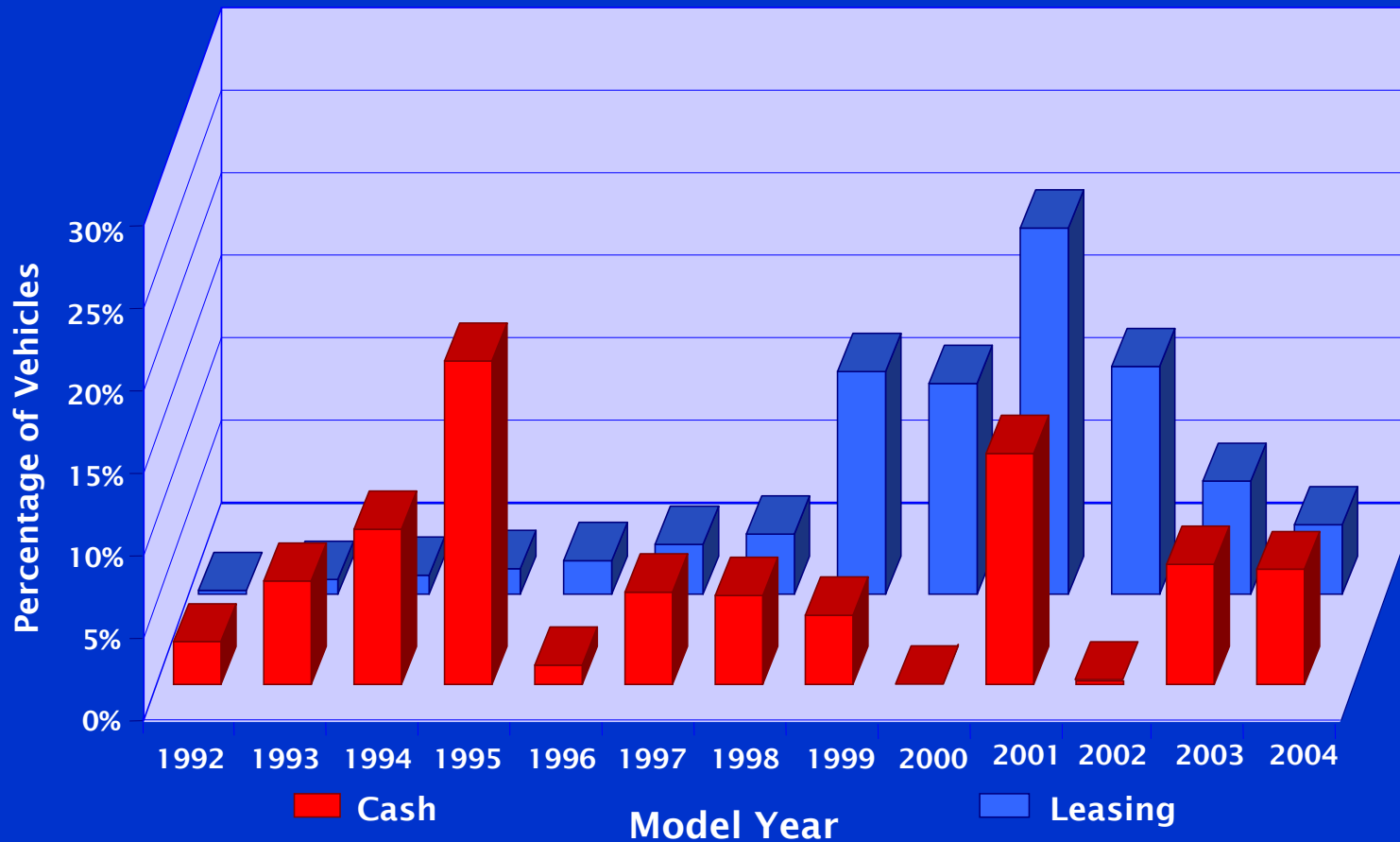
Replacement Funding Requirements by Financing Approach

| Total | Year 1 | Years 1-5 | Years 1-10 |
|----------------------|-----------|------------|------------|
| Financing Approach A | \$ 56.6 M | \$ 265.4 M | \$ 517.6 M |
| Financing Approach B | \$ 58.5 M | \$ 265.6 M | \$ 526.6 M |
| Financing Approach C | \$ 4.1M | \$ 93.2 M | \$ 339.4 M |
| Financing Approach D | \$ 11.5 M | \$ 158.6 M | \$ 420.1 M |
| Annual Average | Year 1 | Years 1-5 | Years 1-10 |
| Financing Approach A | \$ 56.6 M | \$ 53.1 M | \$ 51.8 M |
| Financing Approach B | \$ 58.5 M | \$ 53.1 M | \$ 52.7 M |
| Financing Approach C | \$ 4.1M | \$ 18.6 M | \$ 33.9 M |
| Financing Approach D | \$ 11.5 M | \$ 31.7 M | \$ 42.0 M |

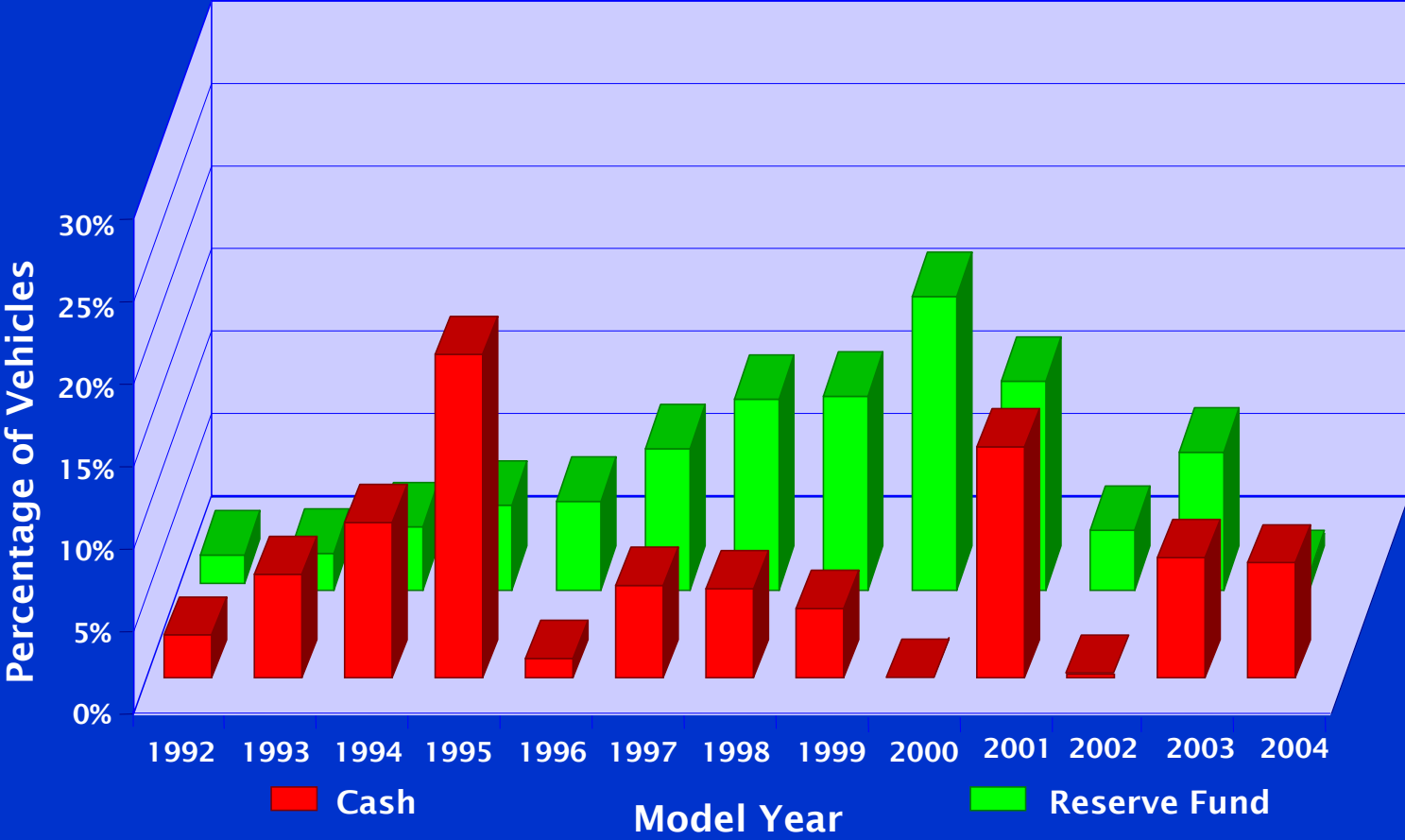
Why is the type of capital financing you use important?

- Because year-over-year funding requirements can vary dramatically depending on the type of financing used
- Because year-over-year funding requirements are a key determinant of how much money most organizations devote to fleet replacement
- Because the amounts of funds an organization devotes to fleet replacement determine whether it has an old or a young fleet

Comparative Distribution of Vehicles by Model Year and Capital Financing Approach



Comparative Distribution of Vehicles by Model Year and Capital Financing Approach

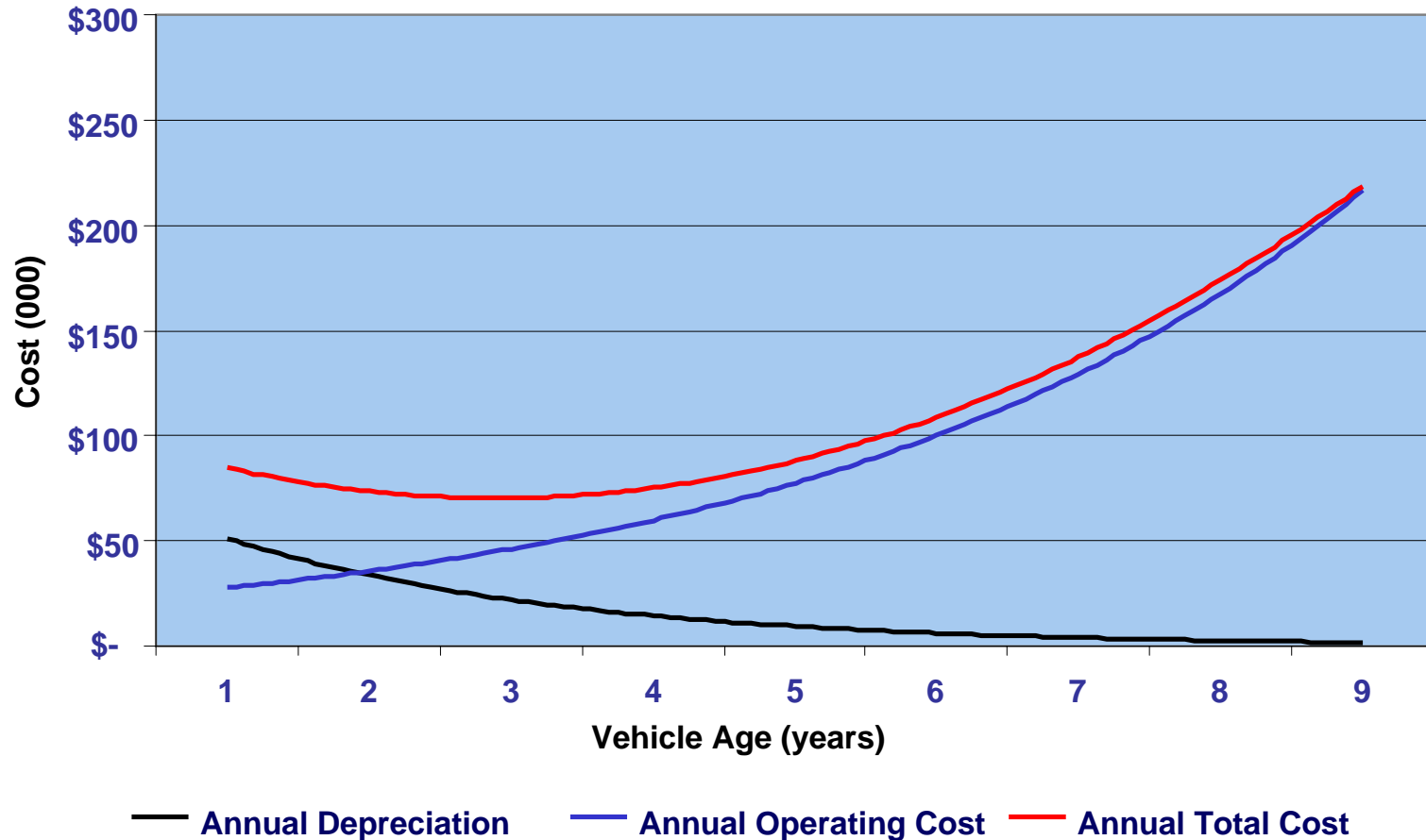


Why is the timely replacement of vehicles and equipment important?

- Controlling employee and public safety
- Controlling fleet maintenance and repair costs
- Managing total costs of asset ownership
- Promoting employee productivity
- Promoting efficiency of fleet management and maintenance activities
- Projecting a positive image to customers, upper management, taxpayers, elected officials, and/or the general public

Sample Life Cycle Costs: Side-loading Refuse Truck

Capital, Operating, and Total Cost Trend Lines



Sample LCA Results: Side-Loading Refuse Truck

| REPLACEMENT CYCLE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| Mileage at replacement | 10,578 | 21,156 | 31,734 | 42,312 | 52,890 | 63,468 | 74,046 | 84,624 | 95,202 |
| CAPITAL COST | | | | | | | | | |
| Total Residual Value | \$ 161,500 | \$ 83,978 | \$ 57,991 | \$ 44,977 | \$ 37,176 | \$ 31,991 | \$ 28,304 | \$ 25,556 | \$ 23,436 |
| Annual Depreciation | \$ 28,500 | \$ 77,522 | \$ 25,987 | \$ 13,013 | \$ 7,801 | \$ 5,186 | \$ 3,687 | \$ 2,748 | \$ 2,120 |
| Cumulative Depreciation | \$ 28,500 | \$ 106,022 | \$ 132,009 | \$ 145,023 | \$ 152,824 | \$ 158,009 | \$ 161,696 | \$ 164,444 | \$ 166,564 |
| OPERATING COST | | | | | | | | | |
| Mean Annual M&R Cost from FMS | \$ 15,021 | \$ 28,137 | \$ 38,610 | | \$ 66,007 | \$ 100,808 | \$ 79,229 | \$ 124,926 | \$ 150,313 |
| Extrapolated Annual M&R Cost | \$ 19,951 | \$ 26,806 | \$ 36,017 | \$ 48,392 | \$ 65,020 | \$ 87,361 | \$ 117,380 | \$ 157,712 | \$ 211,904 |
| Annual Fuel Cost | \$ 8,881 | \$ 9,239 | \$ 9,611 | \$ 9,998 | \$ 10,401 | \$ 10,820 | \$ 11,256 | \$ 11,710 | \$ 12,182 |
| Total Annual Operating Cost | \$ 28,831 | \$ 36,045 | \$ 45,628 | \$ 58,390 | \$ 75,421 | \$ 98,182 | \$ 128,636 | \$ 169,422 | \$ 224,086 |
| Cumulative Operating Cost | \$ 28,831 | \$ 64,876 | \$ 110,503 | \$ 168,894 | \$ 244,315 | \$ 342,497 | \$ 471,133 | \$ 640,556 | \$ 864,641 |
| TOTAL COST | | | | | | | | | |
| Annual Total Cost | \$ 57,331 | \$ 113,567 | \$ 71,615 | \$ 71,404 | \$ 83,222 | \$ 103,368 | \$ 132,323 | \$ 172,170 | \$ 226,205 |
| Cumulative Total Cost | \$ 57,331 | \$ 170,898 | \$ 242,513 | \$ 313,917 | \$ 397,139 | \$ 500,506 | \$ 632,829 | \$ 804,999 | \$1,031,205 |
| NPV of Cumulative Total Cost | \$ 54,086 | \$ 161,225 | \$ 228,786 | \$ 296,148 | \$ 374,659 | \$ 472,176 | \$ 597,009 | \$ 759,433 | \$ 972,835 |
| Equivalent Annual Cost | \$ 55,709 | \$ 84,258 | \$ 80,883 | \$ 79,672 | \$ 81,809 | \$ 87,162 | \$ 95,824 | \$ 108,186 | \$ 124,945 |

Refuse Truck Fleet-wide Cost Savings (Current v Optimal Cycle)

| Replacement Cycle (years) | Annual Cost Savings per Unit | Annual Fleet-Wide Cost Savings |
|--|---|---|
| 9 | \$ | \$ |
| 8 | \$ 16,759 | \$ 2,145,121 |
| 7 | \$ 29,121 | \$ 3,727,511 |
| 6 | \$ 37,782 | \$ 4,836,150 |
| 5 | \$ 43,136 | \$ 5,521,452 |
| 4 | \$ 45,273 | \$ 5,794,962 |

¾-Ton Pickup Truck Fleet-wide Cost Savings (Current v Optimal Cycle)

| Replacement Cycle (years) | Annual Cost Savings per Unit | Annual Fleet-Wide Cost Savings |
|---------------------------|------------------------------|--------------------------------|
| 16 | \$ | \$ |
| 15 | \$ 400 | \$ 328,020 |
| 14 | \$ 775 | \$ 635,555 |
| 13 | \$ 1,125 | \$ 922,495 |
| 12 | \$ 1,462 | \$ 1,199,194 |
| 11 | \$ 1,754 | \$ 1,438,056 |
| 10 | \$ 2,028 | \$ 1,663,264 |
| 9 | \$ 2,286 | \$ 1,874,594 |
| 8 | \$ 2,505 | \$ 2,053,941 |
| 7 | \$ 2,675 | \$ 2,193,278 |
| 6 | \$ 2,834 | \$ 2,324,056 |

Fire Pumper Fleet-wide Cost Savings (Current v Optimal Cycle)

| Replacement Cycle (years) | Annual Cost Savings per Unit | Annual Fleet- Wide Cost Savings |
|--|---|--|
| 16 | \$ | \$ |
| 15 | \$ 5,434 | \$ 619,500 |
| 14 | \$ 10,151 | \$ 1,157,169 |
| 13 | \$ 16,214 | \$ 1,848,420 |
| 12 | \$ 19,888 | \$ 2,267,206 |
| 11 | \$ 23,095 | \$ 2,632,843 |
| 10 | \$ 28,842 | \$ 3,288,027 |
| 9 | \$ 28,851 | \$ 3,289,031 |

TCO Savings for 12 Vehicle Types

| Vehicle Type | Current Cycle (years) | Recomd Cycle (years) | EAC Under Current Cycle | EAC Under Recomd Cycle | Annual Per-Unit Savings | Annual Fleet-Wide Savings |
|-----------------------|-----------------------|----------------------|-------------------------|------------------------|-------------------------|---------------------------|
| Hybrid-Electric Sedan | 4 | 4 | \$ 4,053 | \$ 4,053 | \$ | \$ |
| 7 to 9-Passenger Van | 15 | 8 | \$ 7,050 | \$ 5,379 | \$ 1,671 | \$ 138,684 |
| Patrol Car | 8 | 6 | \$ 9,701 | \$ 9,405 | \$ 296 | \$ 510,648 |
| Investigative Sedan | 11 | 7 | \$ 4,777 | \$ 4,214 | \$ 421 | \$ 414,298 |
| ½-Ton Pickup Truck | 12 | 5 | \$ 6,821 | \$ 4,761 | \$ 2,060 | \$ 688,102 |
| ¾-Ton Pickup Truck | 16 | 6 | \$ 8,823 | \$ 5,989 | \$ 2,834 | \$ 2,324,056 |
| Utility Truck | 20 | 10 | \$ 16,265 | \$ 14,098 | \$ 2,167 | \$ 318,567 |
| Bucket Truck | 17 | 9 | \$ 23,401 | \$ 17,947 | \$ 5,454 | \$ 414,530 |
| Dump Truck | 20 | 9 | \$ 26,731 | \$ 19,986 | \$ 6,745 | \$ 1,112,889 |
| Refuse Truck | 9 | 4 | \$ 147,121 | \$ 79,672 | \$ 45,273 | \$ 5,794,962 |
| Ambulance | 4 | 2 | \$ 27,944 | \$ 23,246 | \$ 4,698 | \$ 483,873 |
| Fire Pumper Truck | 16 | 9 | \$ 77,195 | \$ 48,344 | \$ 28,851 | \$ 3,289,031 |
| | | | | | | \$15,489,640 |

Purchases Financed with Ad Hoc Allocations/Appropriations of Cash

- Annual funding requirements equal purchases prices of assets to be replaced less proceeds from the sale of used vehicles
- Pros
 - Vehicles are owned free and clear as soon as they are paid for
- Cons
 - Pay-before-you-go approach results in lumpy year-over-year funding requirements
 - Volatile funding needs coupled with competition for available funds almost always results in under funding of replacement purchases and old fleets
 - Does not promote recognition of vehicle capital costs or management of TCO

Purchases Financed Using a Replacement Reserve Fund

- Cash reserves are accumulated in a special account or revolving fund, usually through the use of an internal lease or replacement cost charge-back system
- Pros
 - Pay-as-you-go approach makes year-over year funding requirements smooth and predictable
 - Use of cost charge-back system promotes recognition of fixed costs
- Cons
 - Revolving funds and cost charge-back systems are difficult to administer properly and cash reserves are susceptible to raiding during tough economic times
 - Costly to establish if fleet is old

Purchases Financed with Bonds

- Various Types, Including:
 - Commercial Paper Program
 - Certificates of Participation
 - General Obligation Bonds
 - Revenue Bonds
- Pros
 - Pay-as-you-go approach
 - Use of cost charge-back system promotes recognition of fixed costs
- Cons
 - Politicizable
 - Use often constrained by borrowing caps
 - More complicated to administer than other types of borrowing
 - Improper use can result in ever increasing debt burdens

Purchases Financed with Loans

- Frequently referred to as lease purchases
- Available from both commercial banks and many vehicle/equipment manufacturers
- Pros
 - Pay-as-you-go approach
 - Use of cost charge-back system promotes recognition of fixed costs
- Cons
 - Require long-term perspective and commitment
 - Difficult to stop using once started

Capital Leases

- Essentially a long-term rental or rent-to-own agreement
- Asset can be returned to lessor or acquired at end of term
 - Fair Market Value
 - \$1 Buy Out
- Pros
 - Pay as you go approach
 - Use of cost charge-back system promotes recognition of fixed costs
 - Relatively easy to qualify for
- Cons
 - Higher cost of capital than any other debt financing approach
 - No interest savings if lease is terminated early

Operating Leases

- Two Types:
 - Open end (widely used by corporate fleets in US)
 - Closed end (widely used by corporate fleets in Europe, and by individuals in US)
- Pros:
 - Pay-as-you-go approach
 - Cost of leasing is not considered to be debt
 - Often bundled with asset management services
 - Flexible in comparison with capital leases
- Cons
 - Taxable
 - Higher cost of capital
 - Off balance sheet (usually not good for investor-owned utilities)

Sample Comparison of Alternative Capital Financing Approaches

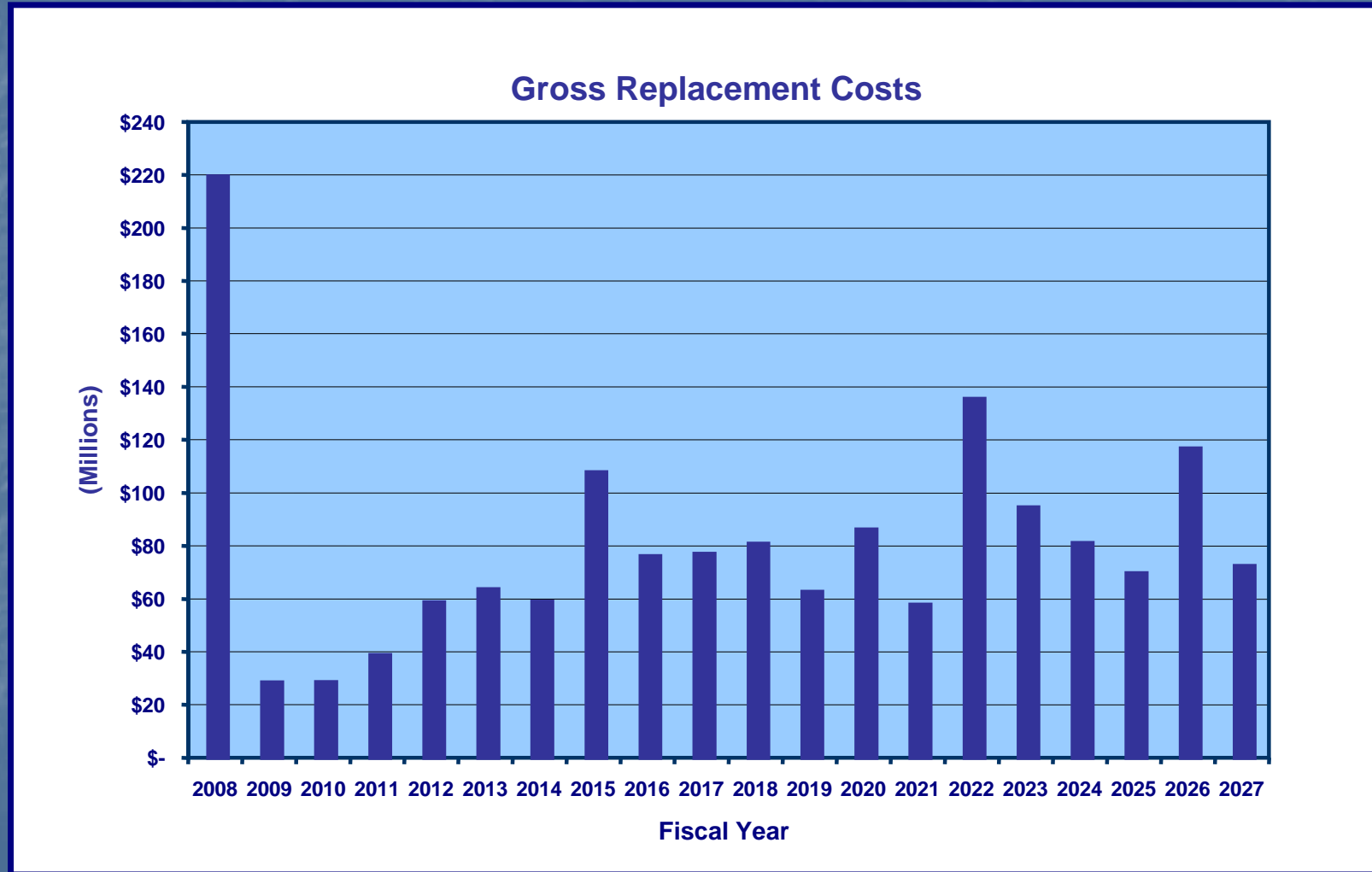
Sample Replacement Cycles

| Vehicle Type | Months | Miles |
|-----------------------------|--------|--------|
| Ambulance (cab and chassis) | 24 | 72,000 |
| Hybrid Electric Sedan | 48 | 50,000 |
| Refuse Truck | 48 | 42,000 |
| Patrol Car | 60 | 68,000 |
| 2x4 1/2T Pickup Truck | 60 | 53,000 |
| 2x4 3/4T Pickup Truck | 72 | 60,000 |
| Investigative Sedan | 84 | 70,000 |
| Passenger Van | 96 | 60,000 |
| 10-Yard Dump Truck | 108 | 56,000 |
| Fire Pumper Truck | 108 | 75,000 |
| Medium-Duty Utility Truck | 120 | 57,000 |

Sample Purchase Prices

| Vehicle Type | Purchase Price |
|-----------------------------|----------------|
| Ambulance (cab and chassis) | \$ 30,072 |
| Hybrid Electric Sedan | \$ 20,876 |
| Refuse Truck | \$ 190,000 |
| Patrol Car | \$ 24,357 |
| 2x4 1/2T Pickup Truck | \$ 13,593 |
| 2x4 3/4T Pickup Truck | \$ 15,843 |
| Investigative Sedan | \$ 16,076 |
| Passenger Van | \$ 18,256 |
| 10-Yard Dump Truck | \$ 135,000 |
| Fire Pumper Truck | \$ 445,000 |
| Medium-Duty Utility Truck | \$ 78,616 |

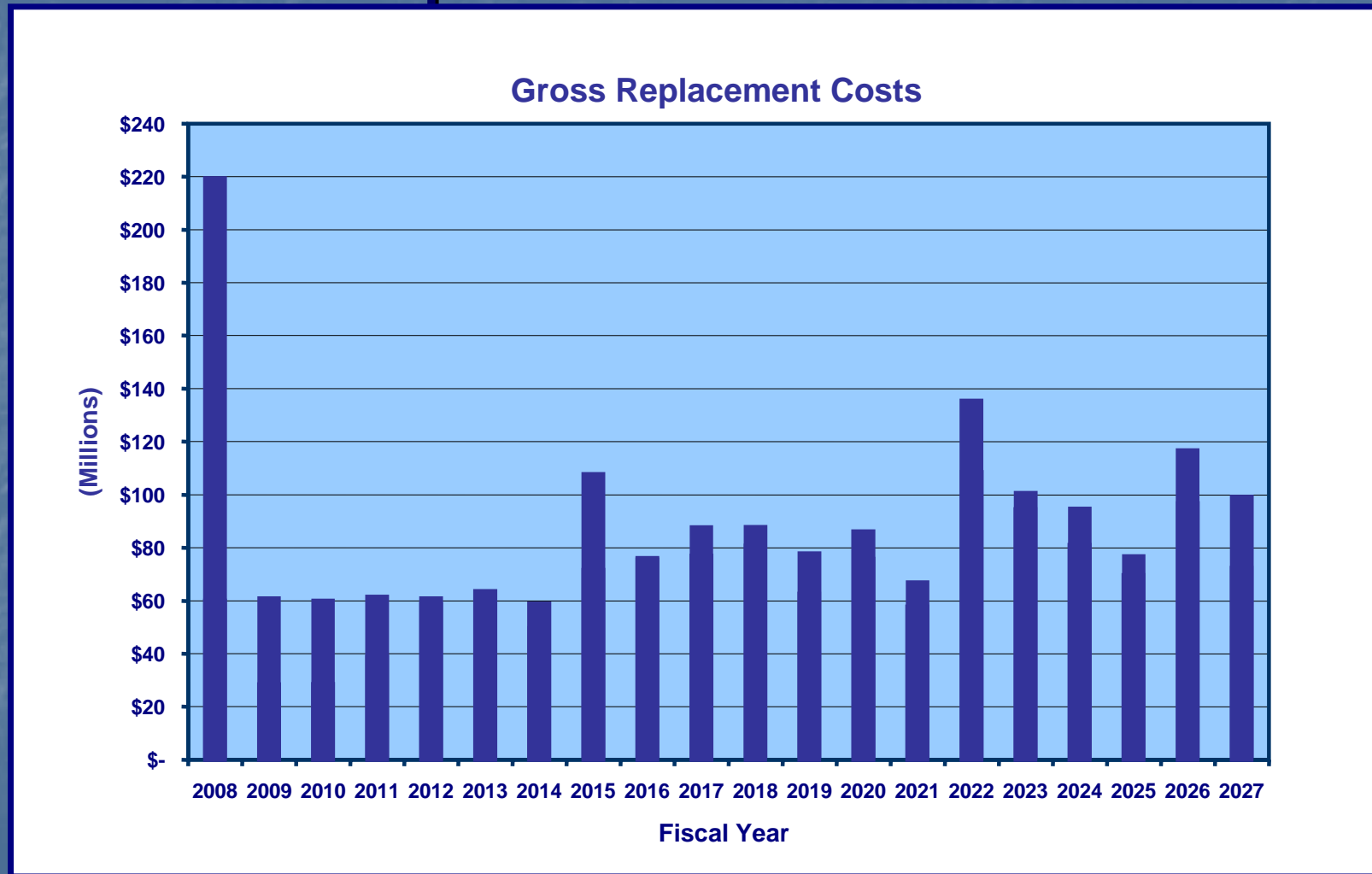
Baseline Fleet Replacement Plan



Fleet Statistics

| | |
|---|---------|
| Total number of units | 7,386 |
| Number of asset types | 233 |
| Current average age (years) | 7.5 |
| Imputed average replacement cycle (years) | 15.0 |
| Average recommended replacement cycle (years) | 6.2 |
| Original purchase price | \$248 M |
| Replacement cost* | \$366 M |
| Average annual replacement cost* | \$59 M |
| Current replacement backlog* | \$220 M |
| Number of units that exceed age and/or usage criteria for replacement | 5,340 |
| Percentage of units that exceed age and/or usage criteria for replacement | 72% |

Baseline versus Smoothed Replacement Plans



Key Statistics for Baseline and Smoothed Replacement Plans

| Statistic | Baseline | Smoothed |
|--|------------|------------|
| Year 1 Replacement Expenditures | \$ 220.2 M | \$ 60.5 M |
| Used Vehicle Sale Proceeds in Year 1 | \$ 25.5 M | \$ 3.8 M |
| Net Replacement Cost in Year 1 | \$ 194.7 M | \$ 56.7 M |
| # Vehicles Replaced in Year 1 | 5,340 | 2,192 |
| # Vehicles Replaced in Years 1-5 | 8,723 | 7,177 |
| Total Replacement Expenditures in Years 1-5 | \$ 377.5 M | \$ 305.3 M |
| Total Sale Proceeds in Years 1-5 | \$ 70.3 M | \$ 39.9 M |
| Total Net Replacement Cost in Years 1-5 | \$ 307.2 M | \$ 265.4 M |
| Average Annual Net Replacement Cost for Years 1-5 | \$ 61.4 M | \$ 53.1 M |
| Average Annual Net Replacement Cost for Years 1-10 | \$ 59.1 M | \$ 51.8 M |

All amounts in nominal dollars

Financing Approaches Evaluated

- Ad Hoc Appropriations of Cash
- Reserve Fund and Charge-Back System
- General Obligation Bonds
- Operating Lease

Key Analytical Parameters Used

- Under a Reserve Fund
 - Charge-back rates are based on net capital cost of each vehicle (i.e., sale proceeds are returned to fund)
 - Replacement rates are calculated for each vehicle and include two components:
 - ◆ Depreciation
 - ◆ Replacement Surcharge
 - Book value of current assets estimated based on original purchase price less projected residual value
 - Interest earning rate of 3 percent

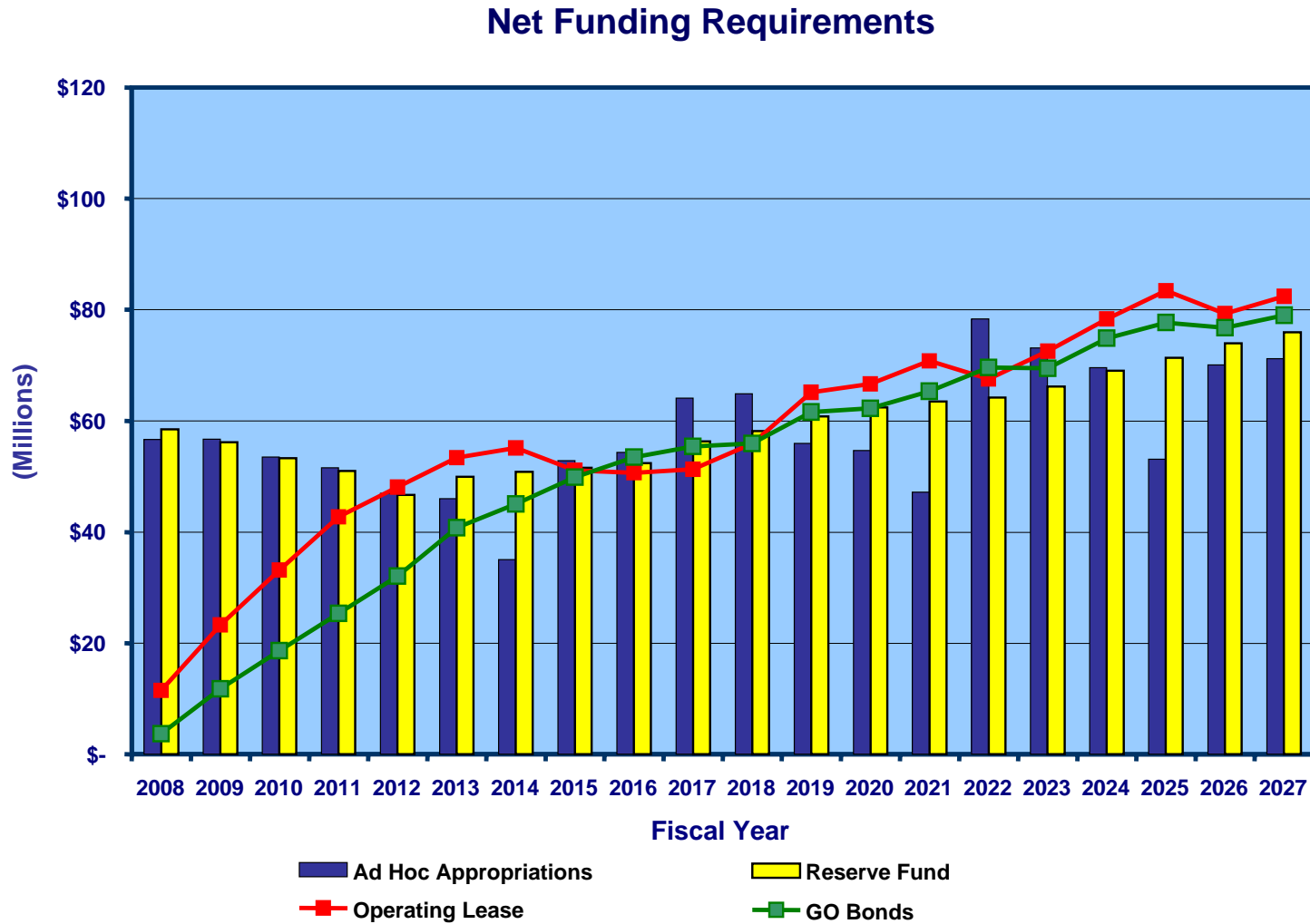
Key Analytical Parameters Used

- Under a Bond Program
 - Financing periods used are 60 or 120 months
 - ◆ All vehicles with a life expectancy in excess of 60 months are assumed to be financed over 120 months
 - ◆ All others are assumed to be financed over 60 months
 - All-in COC in both cases is 3.89 percent
 - Current approach involves rolling purchases financed with commercial paper into GO bonds with 96-month term
 - Note that average recommended replacement cycle is 75 months

Key Analytical Parameters Used

- Under a Lease Program
 - Open-ended operating lease
 - ◆ Asset must be retained for minimum of 12 months, after which it can be turned in at any time before or after planned lease term
 - ◆ City participates in gain or loss on sale of asset at end of lease
 - Lease periods range from 48 to 84 months
 - Interest rate used is 5.3 percent for all periods
 - Sales tax is calculated at 7.5 percent of capitalized cost and is collected at lease inception

Capital Financing Comparison



Net Funding Requirements by Financing Approach

| Total | Year 1 | Years 1-5 | Years 1-10 |
|-------------------------------------|-----------|------------|------------|
| Ad Hoc Appropriations | \$ 56.6 M | \$ 265.4 M | \$ 517.6 M |
| Reserve Fund and Charge-Back System | \$ 58.5 M | \$ 265.6 M | \$ 526.6 M |
| Bonds | \$ 4.1M | \$ 93.2 M | \$ 339.4 M |
| Operating Leases | \$ 11.5 M | \$ 158.6 M | \$ 420.1 M |
| Annual Average | Year 1 | Years 1-5 | Years 1-10 |
| Ad Hoc Appropriations | \$ 60.5 M | \$ 53.1 M | \$ 51.8 M |
| Reserve Fund and Charge-Back System | \$ 58.5 M | \$ 53.1 M | \$ 52.7 M |
| Bonds | \$ 4.1M | \$ 18.6 M | \$ 33.9 M |
| Operating Leases | \$ 11.5 M | \$ 31.7 M | \$ 42.0 M |

A Question About Interest

- Why pay it?

Questions

For More Information

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