Objective

Provide detailed cost estimates for installing and maintaining a payphone with a phone booth in both a remote national park and New York City, using the same assumptions. Include all associated costs and present a final summary in a "BY THE NUMBERS" format.

Assumptions for Both Scenarios

Time Frame: Costs are calculated for the first year.

Depreciation Period: Installation costs are depreciated over 5 years.

Maintenance Visits: 2 per year.

Service Calls: 2 per year.

Coin Collection Frequency:

National Park: Monthly.

New York City: Weekly.

Phone Booth Type: Standard enclosed booth used in 1995.

Labor and Material Costs: Reflect average prices in 1995.

1. National Park Payphone with Phone Booth

A. Initial Installation Costs

Payphone Unit: $2,500

Phone Booth:

Cost: $4,000

Includes booth structure, lighting, and weatherproofing suitable for remote locations.

Telephone Line Installation:

Distance: 5 miles to nearest infrastructure.

Cost per Mile: $20,000

Total Line Installation: 5 miles × $20,000/mile = $100,000

Permits and Environmental Assessments:

Cost: $10,000

Includes environmental impact studies and compliance with national park regulations.

Site Preparation and Installation Labor:

Trenching and Site Work: $8,000

Booth Assembly and Installation: $2,000

Power Supply Installation:

Solar Panel System: $3,000

Remote location may require independent power source.

Total Installation Cost: $129,500

B. Annualized Installation Cost

Depreciated Over 5 Years: $129,500 ÷ 5 = $25,900 per year

C. Annual Maintenance Costs

Line Rental Fees: $50/month × 12 = $600

Power System Maintenance (Solar): $200

Regular Maintenance Visits:

2 visits × $200 (higher due to remote location) = $400

Service Calls:

2 calls × $300 = $600

Coin Collection:

12 visits × $100 = $1,200

Cleaning and Booth Upkeep:

$500

Total Annual Maintenance Costs: $3,500

D. Total Annual Cost for 1 Year

Annualized Installation Cost: $25,900

Annual Maintenance Costs: $3,500

Bottom Line Total: $29,400

2. New York City Payphone with Phone Booth

A. Initial Installation Costs

Payphone Unit: $2,500

Phone Booth:

Cost: $3,000

Standard urban booth with lighting and minimal weatherproofing.

Permits and Fees:

Cost: $500

Site Preparation and Installation Labor:

Concrete Pad and Mounting: $1,000

Labor for Installation: $1,000

Electrical Connection:

Cost: $500

Connect to city power grid for lighting.

Total Installation Cost: $8,500

B. Annualized Installation Cost

Depreciated Over 5 Years: $8,500 ÷ 5 = $1,700 per year

C. Annual Maintenance Costs

Line Rental Fees: $50/month × 12 = $600

Electricity Costs for Lighting: $10/month × 12 = $120

Regular Maintenance Visits:

2 visits × $100 = $200

Service Calls:

2 calls × $150 = $300

Coin Collection:

52 visits × $50 = $2,600

Cleaning and Booth Upkeep:

$800

Higher due to urban wear and tear.

Total Annual Maintenance Costs: $4,620

D. Total Annual Cost for 1 Year

Annualized Installation Cost: $1,700

Annual Maintenance Costs: $4,620

Bottom Line Total: $6,320

BY THE NUMBERS: Final Summary

National Park Payphone with Phone Booth

Initial Installation Cost: $129,500

Payphone Unit: $2,500

Phone Booth: $4,000

Telephone Line Installation (5 miles): $100,000

Permits and Assessments: $10,000

Site Preparation and Labor: $10,000

Power Supply Installation (Solar): $3,000

Annualized Installation Cost (over 5 years): $25,900

Annual Maintenance Costs: $3,500

Line Rental Fees: $600

Power System Maintenance: $200

Maintenance Visits: $400

Service Calls: $600

Coin Collection: $1,200

Cleaning and Upkeep: $500

Total Annual Cost: $29,400

New York City Payphone with Phone Booth

Initial Installation Cost: $8,500

Payphone Unit: $2,500

Phone Booth: $3,000

Permits and Fees: $500

Site Preparation and Labor: $2,000

Electrical Connection: $500

Annualized Installation Cost (over 5 years): $1,700

Annual Maintenance Costs: $4,620

Line Rental Fees: $600

Electricity for Lighting: $120

Maintenance Visits: $200

Service Calls: $300

Coin Collection: $2,600

Cleaning and Upkeep: $800

Total Annual Cost: $6,320

Comparison Highlights

National Park Total Annual Cost: $29,400

Key Drivers:

High infrastructure costs due to remote location.

Additional costs for environmental compliance and solar power.

New York City Total Annual Cost: $6,320

Key Drivers:

Utilization of existing infrastructure reduces costs.

Higher coin collection frequency increases maintenance but also revenue potential.

Additional Notes

Coin Collection Responsibility:

National Park: Likely performed by specialized personnel due to remote access, increasing costs.

New York City: Handled by regular staff or contracted services with established routes.

Maintenance Complexity:

National Park: Remote location leads to higher travel expenses and time for technicians.

New York City: Easy access allows for quicker response times and lower costs.

Revenue Potential:

National Park: Lower usage may result in less revenue from calls.

New York City: Higher foot traffic increases potential revenue.

Conclusion

National Park Scenario:

Total First-Year Cost: $29,400

Significant investment required due to infrastructure and remote location challenges.

New York City Scenario:

Total First-Year Cost: $6,320

Cost-effective due to existing infrastructure and higher population density.