



Long Range Planning

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Lewis County Highway Superintendent



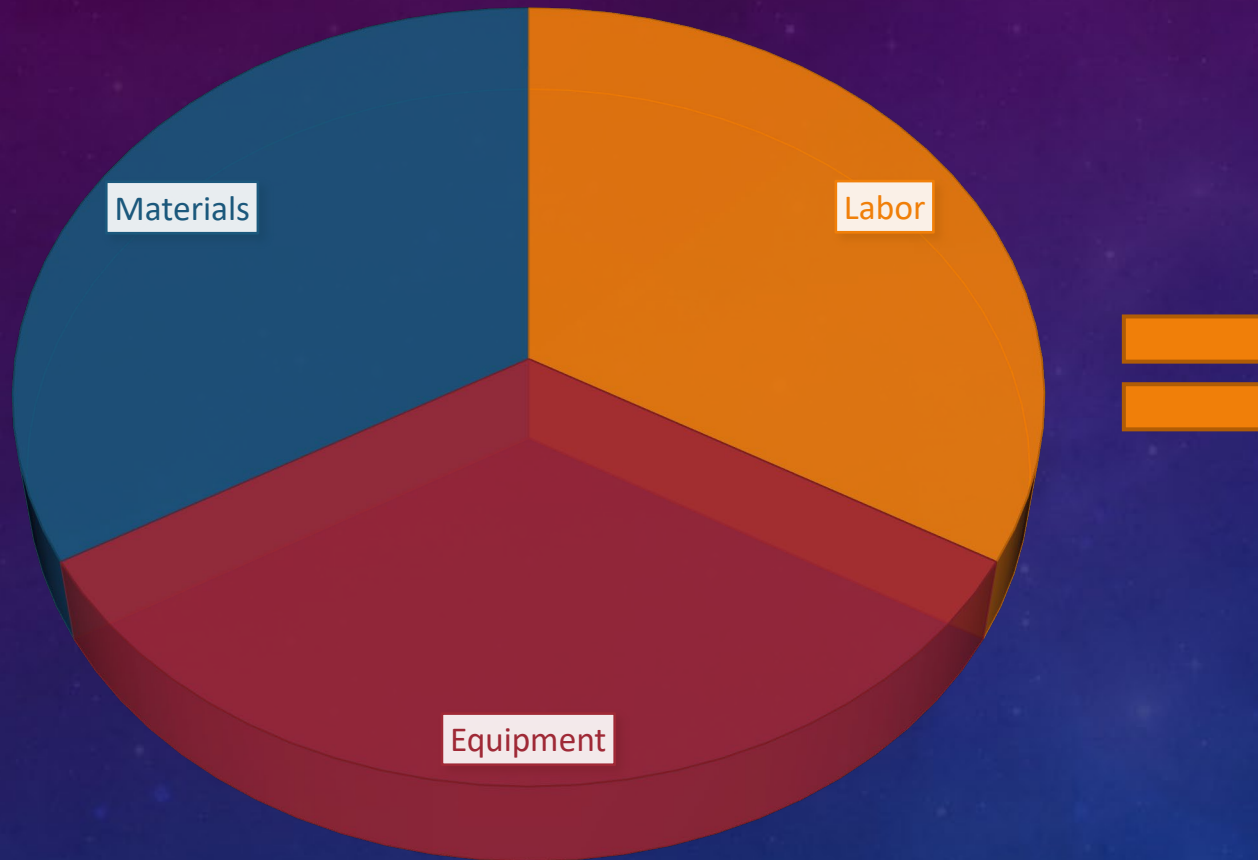
- Why do I need to understand a capital budget ?
- Why do I need to understand an operating budget?
- How do they work together?
- Why can't I get the funds I need for equipment
- Why can't I seem to improve my road network

Two budgets working together

- The annual budget is the only budget required by law
- Generally, the only budget that we worry about
- However, your capital budget is essential in controlling your operating budget

Highway Budget

EXPENSES

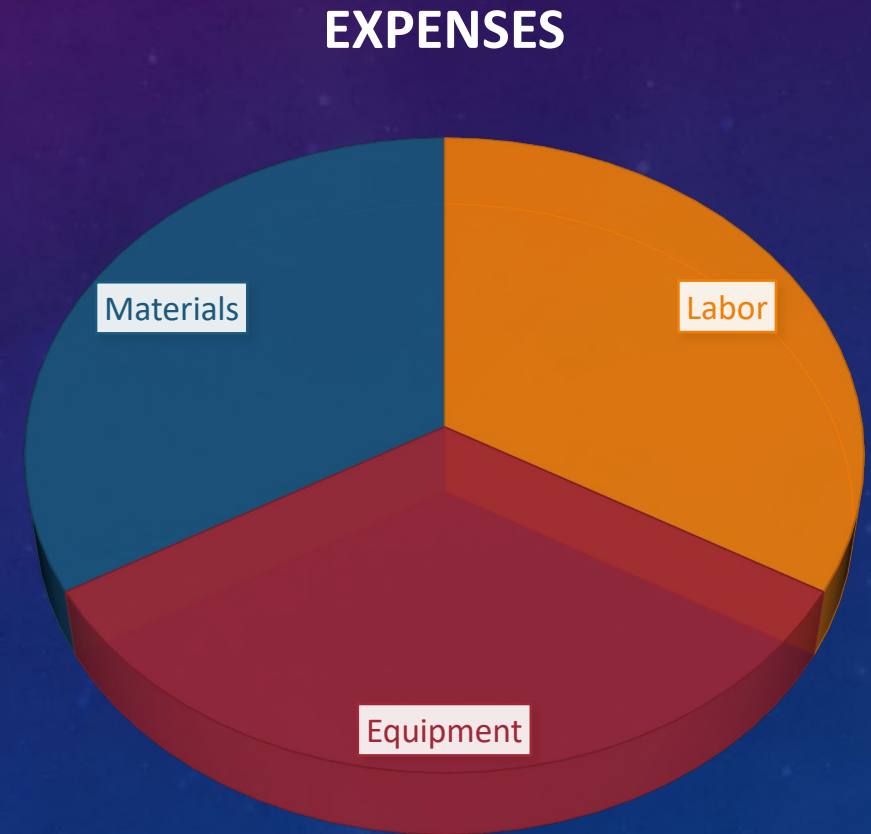


Zero based budgeting Exercise

- If we started a new Town
 - Let's imagine 30 miles of road in various condition
- No Equipment
- No Employees
- We have no budget

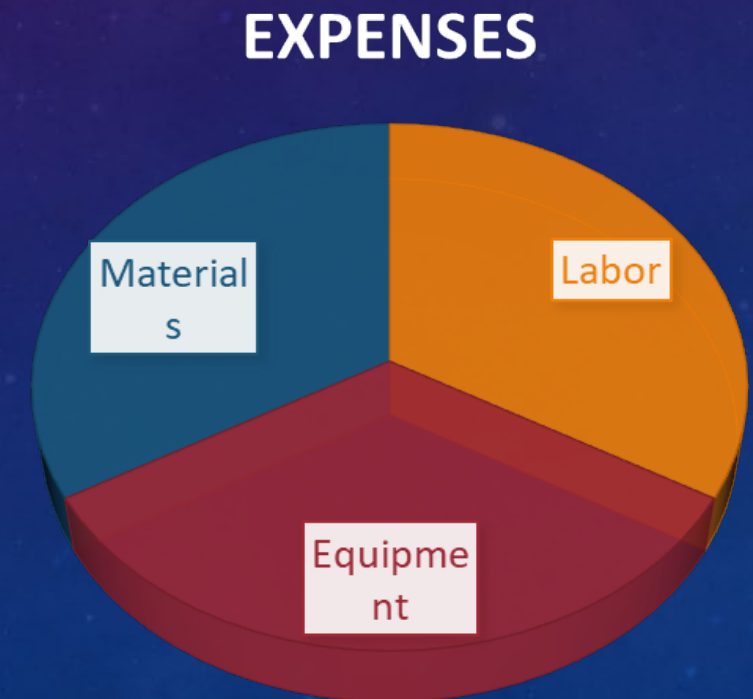
Zero based budgeting Exercise

- What would you ask for
- Would it look like your current budget
- How would you justify each area
- Would there be a different mix



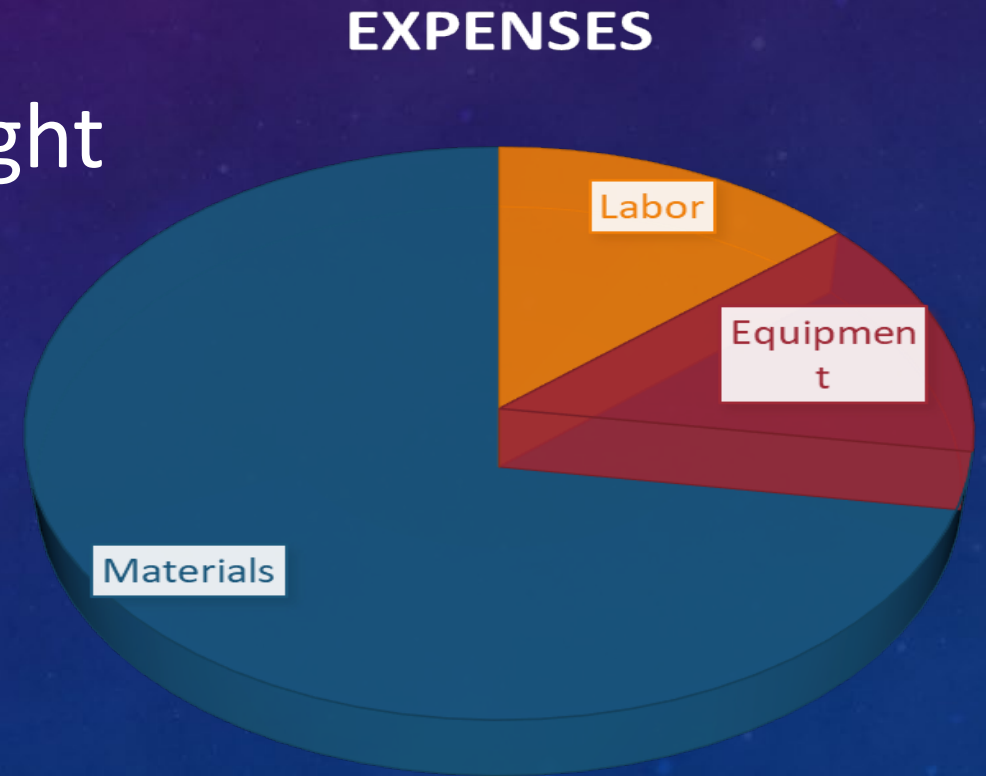
Things to think about

- Do you know the percentage of each
 - Labor Vs Equipment Vs Materials
- If you increased one area, how would it impact the others?
- If you could only increase one area to get more done which, would it be?



Things to think about

- Assume the pie is limited in size
- What has the most impact on your roads
- Goal is efficiency by creating the right mix



Things to think about

- What is the annual cost of a piece of equipment?
- What is the annual cost of an employee
- What has the greatest impact on your roads
 - Labor, Equipment, Materials
- How do you determine what you need of each

Capital budgeting creates and controls the operating budget

- Roads
 - too little maintenance means premature failure and larger capital appportionments
- Equipment
 - Deferred purchases result in increased repair budgets and mis-allocated or increased labor costs

Understanding the relationship between Capital budget and Operating (Annual) Budget

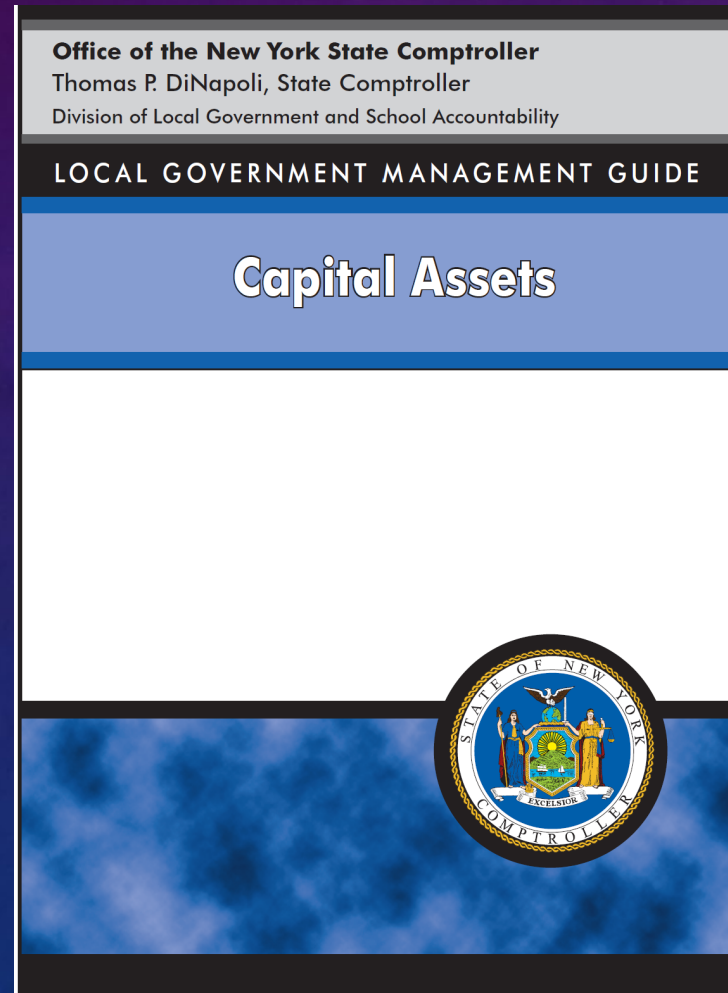
- Lack of capital planning increases your operating budget
- Repair budgets go up as the asset depreciates
- Disposal income is not consistently handled or budgeted for
- Often you can fund an increase in your capital budget with savings in your operating budget
 - You win from labor savings and efficiency with better equipment

Long Range Planning

- Helps you develop your capital plan
- Helps you to control your operating budget
- Helps you manage your assets

Understanding Capital budgets

<https://www.osc.state.ny.us/files/local-government/publications/pdf/capital-assets.pdf>



Understanding Capital budgets

Capital assets are defined as tangible or intangible assets that are used in operations and that have useful lives of more than one year, such as land and improvements to land, buildings and building improvements; vehicles; machinery; equipment; and sewer, water and highway infrastructures.

Examples of Capital expenditures

- Land (101)
- Buildings (102-112)
- Improvements Other Than Buildings (103-113)
- Equipment (104-114)
- Construction Work in Progress (105)
- Infrastructure (106-116)
- Other Capital Assets (107-117)

Examples of Assets in Highway Department

- Roads
- Equipment
- Signs
- Culverts
- Bridges
- Guiderail

Assets

- Equipment is a piece of capital equipment
 - Usually valued at over \$5,000 dollars
 - Know your procedures
- Capital equipment has a defined life span
 - Know what that is?
- This equipment is useful over many operating budget cycles

Planning & Asset Management

- Does not need to be complex
- List what you are responsible for
 - Condition
 - Costs
 - Any information that will help you

Goal

- Have an annual cost per piece of equipment in your fleet
- You should budget ___\$___ annually for every Piece of equipment in your fleet

Plow Truck

- New Plow Truck in 2022 for \$250,000
- Life Expectancy is 15 years ?
 - This can be adjusted to best reflect your plan (see when to replace)
- $250,000 / 15 = \$16,666$ per year
- Should your 2022 budget be \$250,000 or \$16,666
- What other costs should be considered?

NPV (Life Cycle Cost)

- NPV(life cycle cost) (capital cost + repair cost/life span)=
Annual budget number

Life cycle cost

- Price of acquisition
- Interest paid
- Minus residual value (?)
 - How long you keep impact residual value & repair costs
- Repair Costs

Lay the groundwork

- Keep good records of all repairs associated with each piece of equipment
- Keep replacement value updated annually for every piece
- Do an annual report on cost of operation for each piece of equipment
- Operating cost should decrease every year...When it starts to increase you should replace it!

Goal

- Minimize equipment cost
 - Focus on NPV(life cycle cost) (capital cost + repair cost/life span)
 - Maximizing resale value
 - Minimizing repair costs

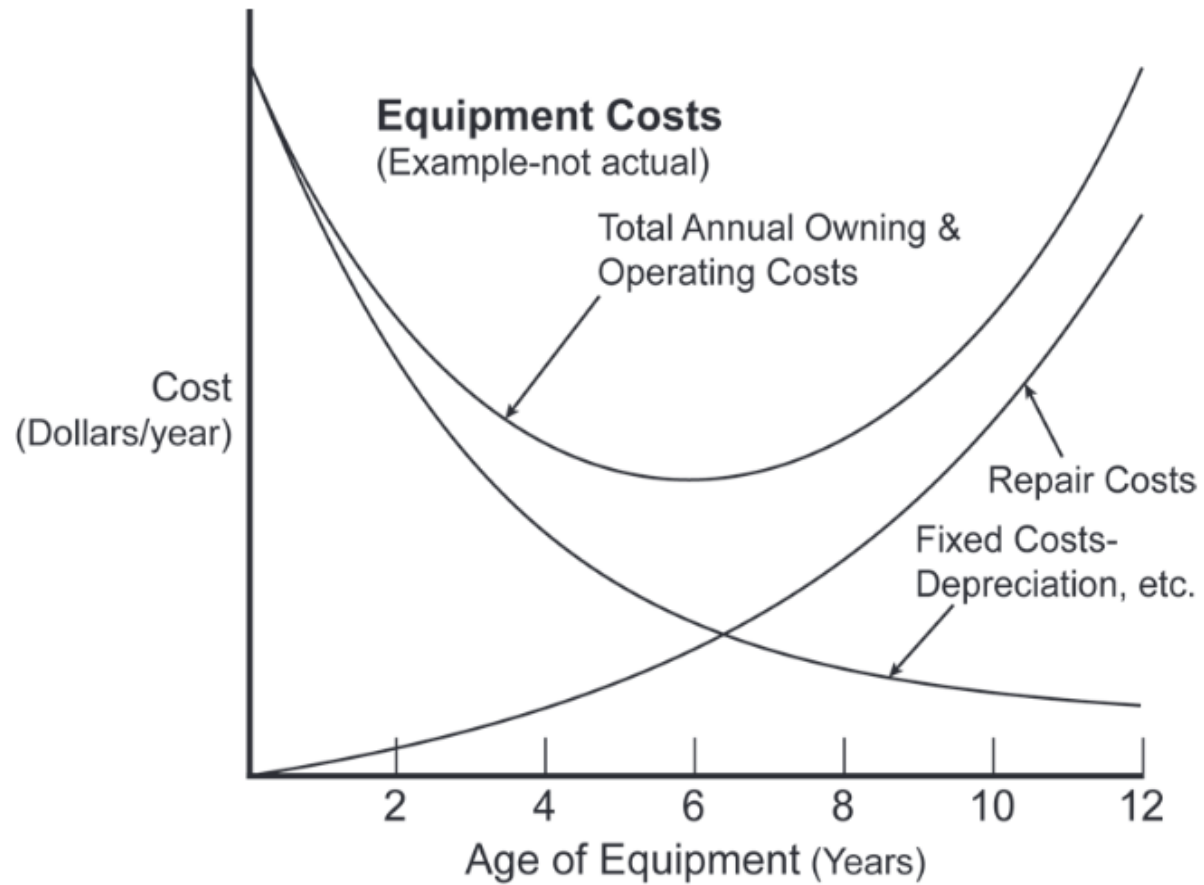
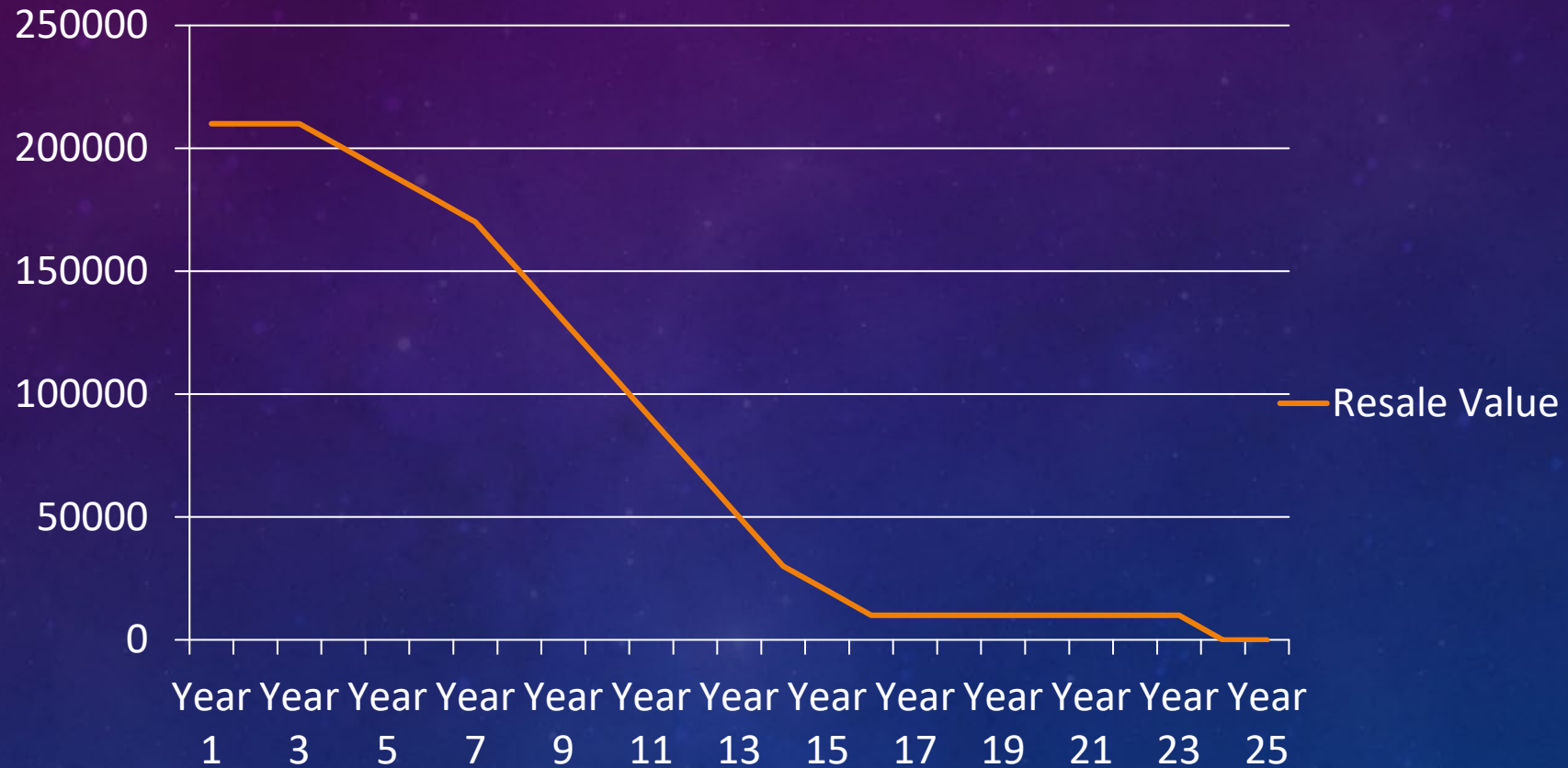


Figure 7. Equipment Cost Example

Purchase price + repairs & maintenance / length of ownership

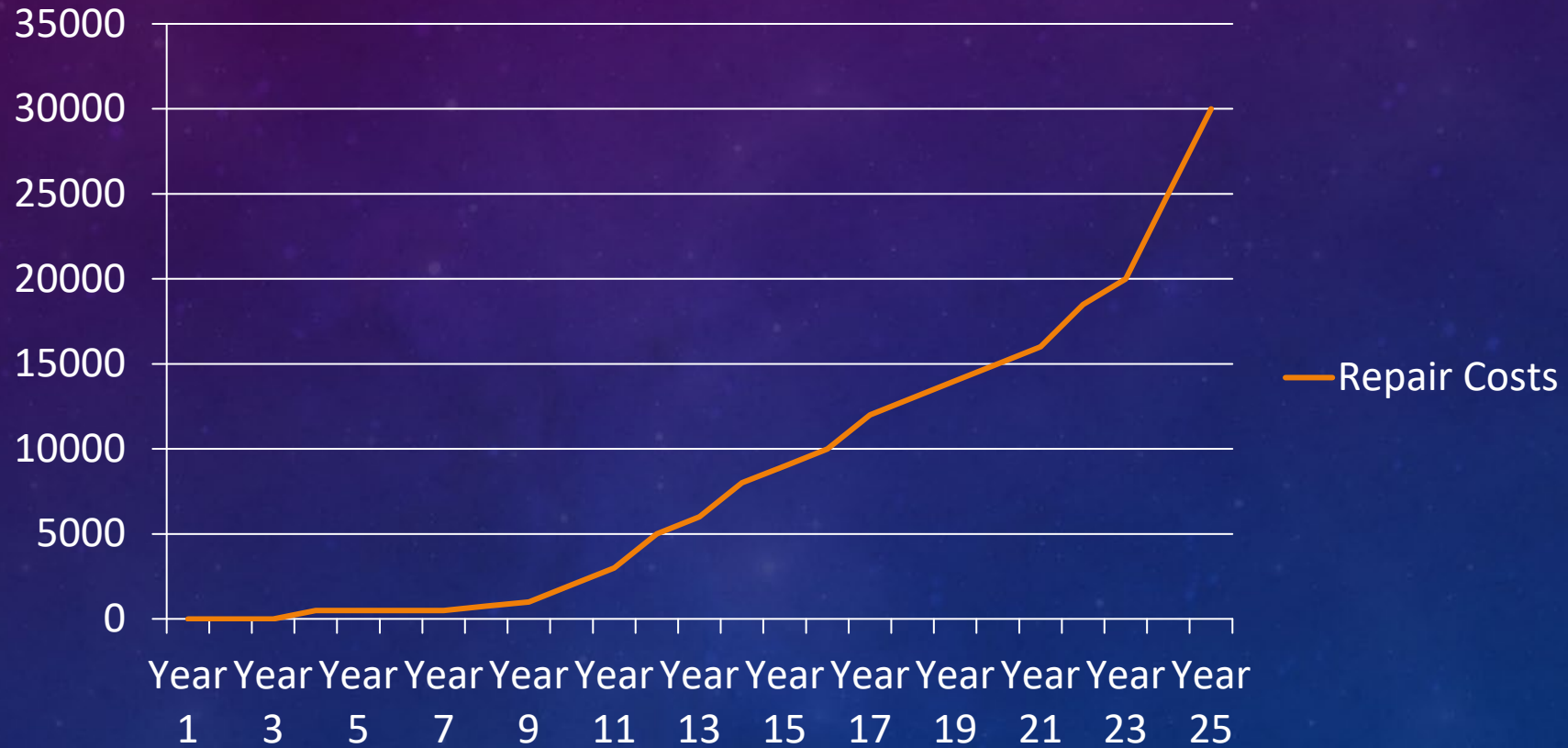
- 1st year $250,000 / 1 = \$250,000$
- 2nd $\$250,000 + \$1,000 / 2 = \$125,500$
- 3rd $\$250,000 + \$1,000^* + \$2,000 / 3 = \$84,333$
- 4th $\$250,000 + 3,000^* + \$2000 / 4 = \$63,750$
- 5th $\$250,000 + 5,000^* + \$5,000 / 5 = \$52,000$
- 6th $\$250,000 + \$10,000^* + 10,000 / 6 = \$45,000$
- 7th $\$250,000 + \$20,000^* + \$35,000 / 7 = \$43,571$
- 8th $\$250,000 + \$55,000^* + \$40,000 / 8 = \$43,125$
- 9th $\$250,000 + \$95,000^* + \$45,000 / 9 = \underline{\underline{\$43,333}}$

Maximize Asset Value



Minimize Repair Cost

Repair Costs



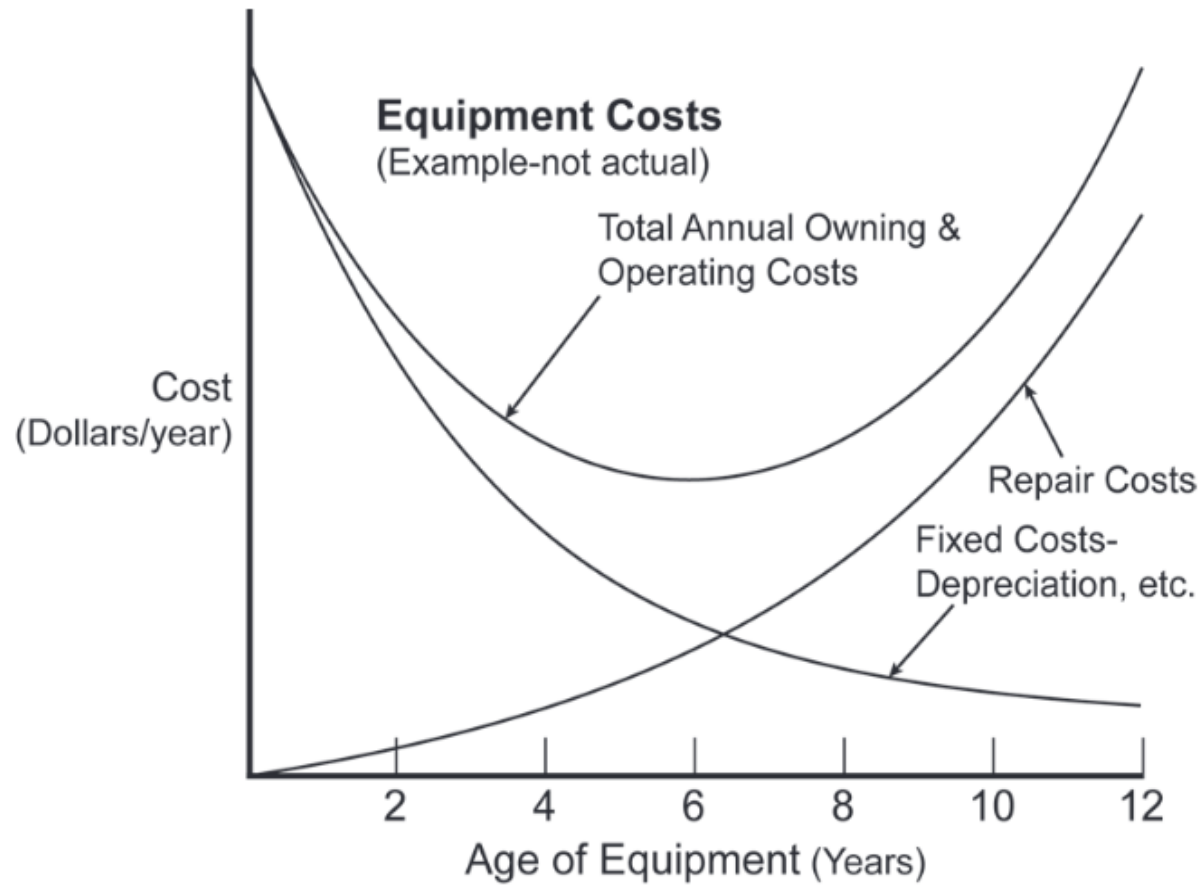


Figure 7. Equipment Cost Example

Equipment Plan

- Your annual equipment inventory is a good place to Start
- Generic Plan
- Tracey Town
- Lewis County

Examples of Assets in Highway Department

- ~~Equipment~~
- Signs
- Roads
- Culverts
- Bridges
- Guiderail

Start with a good inventory of your road assets

Sign Plan

- How many signs do you have? (300)
- Average life span? (10 years)
- Should budget 1/10 of inventory per year (30)
- Average sign cost? (\$300)
- Annual Budget? (\$9,000)
- Are you budgeting the correct amount?
- Town signs

Examples of Assets in Highway Department

- ~~Equipment~~
- ~~Signs~~
- Culverts
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Start with a good inventory of your road assets

- [Local Highway Inventory – Local Roads \(ny.gov\)](#)
- [Tracey Town Roads, Signs, Culverts](#)
- [Lewis County Roads](#)

Pavement Plan

- Can be simple time based
- Can be based on condition and repair needs
- Can do a pavement inventory (CAMP)
- [Lewis County Road Inventory](#)
- [Lewis County GIS](#)

Pavement Plan

- Generally, your Capital budget is CHIPS
- Start with sealing first, If you have local money
 - Right process at the right time
- Make sure you are improving the system
- [PPRA | Remaining Service Life Calculator \(roadresource.org\)](#)



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