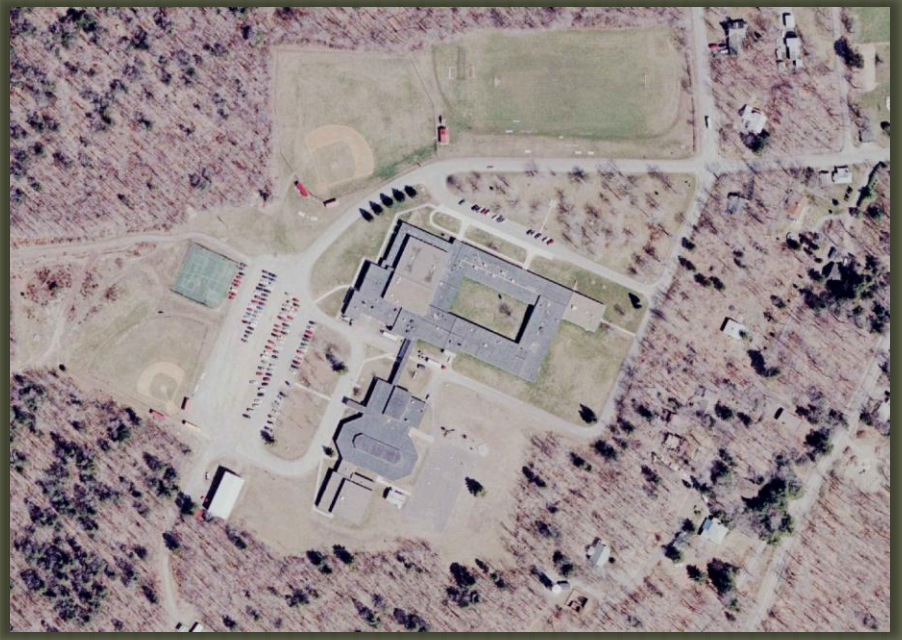
SULLIVAN COUNTY SCHOOL DISTRICT

Elementary and High School Complex Biomass District Heating Project



September 14, 2010

Wood Education and Resource Center

Presentation Overview

- Project background
- Overview of proposed project
- Summary of financial analyses

Project Background

- Sullivan County responded to a survey by PA Fuels for Schools and Beyond, project opportunity identified by:
  - Mike Palko, PA DCNR Bureau of Forestry and Stacy Koch, USDA NRCS, Endless Mountains RC&D Council
- Project selected for Preliminary Feasibility Study funded by USDA Forest Service Northeastern Area, Wood Education and Resource Center (WERC)
- WERC provided $20,000 for consulting services to assist in project implementation

Project Overview, Status Update

- Existing fuel usage, opportunity for savings
- Proposed project layout
- Project costs and benefits
- Status of grants

Existing Fuel Oil Usage, Cost

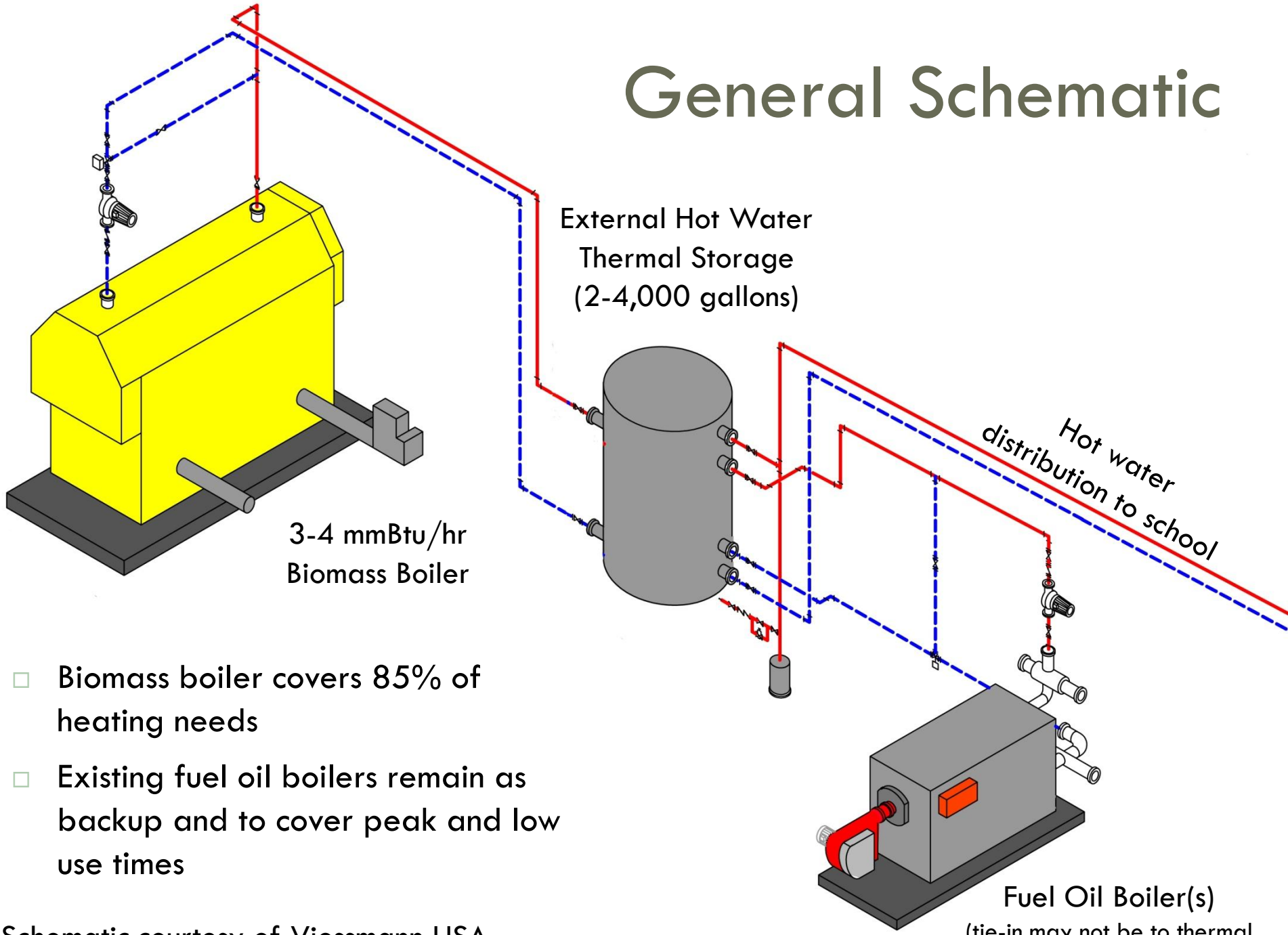
- 14-year average = 64,400 gallons fuel oil per year
- New HVAC system, estimated 15% reduction to average of 54,700 gallons
  - 54,100 gallons used in 09, $153,000 spent
- New 17,500 sf addition adds ~7,300 gallons/year
- ~62,000 gal * $2.88/gal = $178,560 per year on fuel oil

Potential Fuel Usage, Cost

- Biomass system annual fuel cost ~$64,000
  - Biomass system covers 85% annually, ~$37,000
    - 884 tons @ $42/ton
  - Fuel oil covers 15% annually, ~$27,000

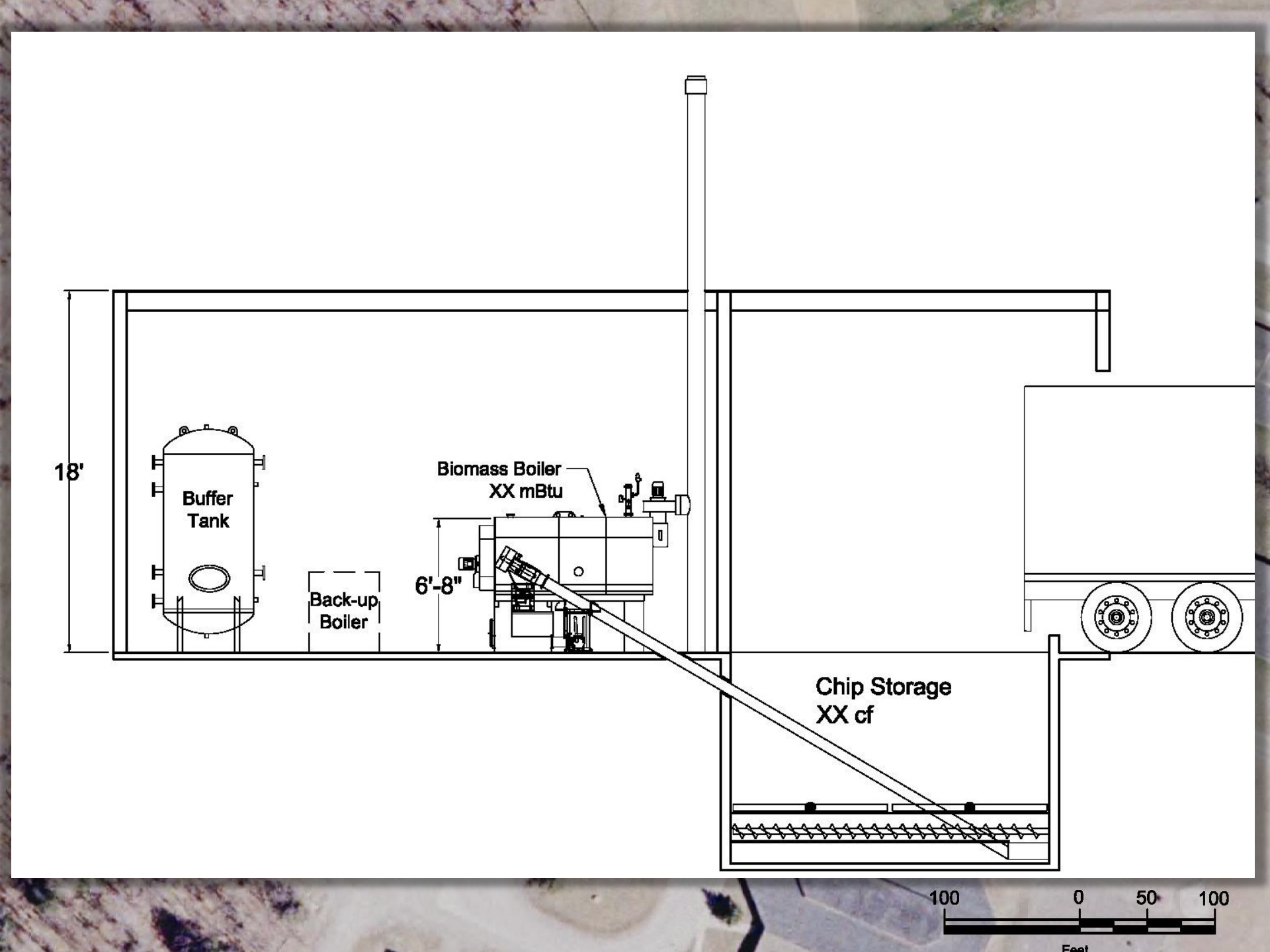
- Potential annual savings of ~$115,000

General Schematic



- Biomass boiler covers 85% of heating needs
- Existing fuel oil boilers remain as backup and to cover peak and low use times

Schematic courtesy of Viessmann USA


18'
Buffer Tank
Back-up Boiler
Biomass Boiler
XX mBtu
6'-8"
Chip Storage
XX cf
100
0
50
100
Feet

Biomass Costs and Benefits

- Estimated cost range of $1.5 - $1.9 Million
  - $830,000 from grants

- Benefits
  - Annual fuel savings of $115,000
  - Local fuel purchases of over $37,000 annually (~884 tons of biomass)
  - Reduce use of foreign oil by 53,000 gallons/yr
  - Reduce CO2 emissions by 535 metric tons annually
  - Renewable energy education
  - Potential to tie-in solar thermal component

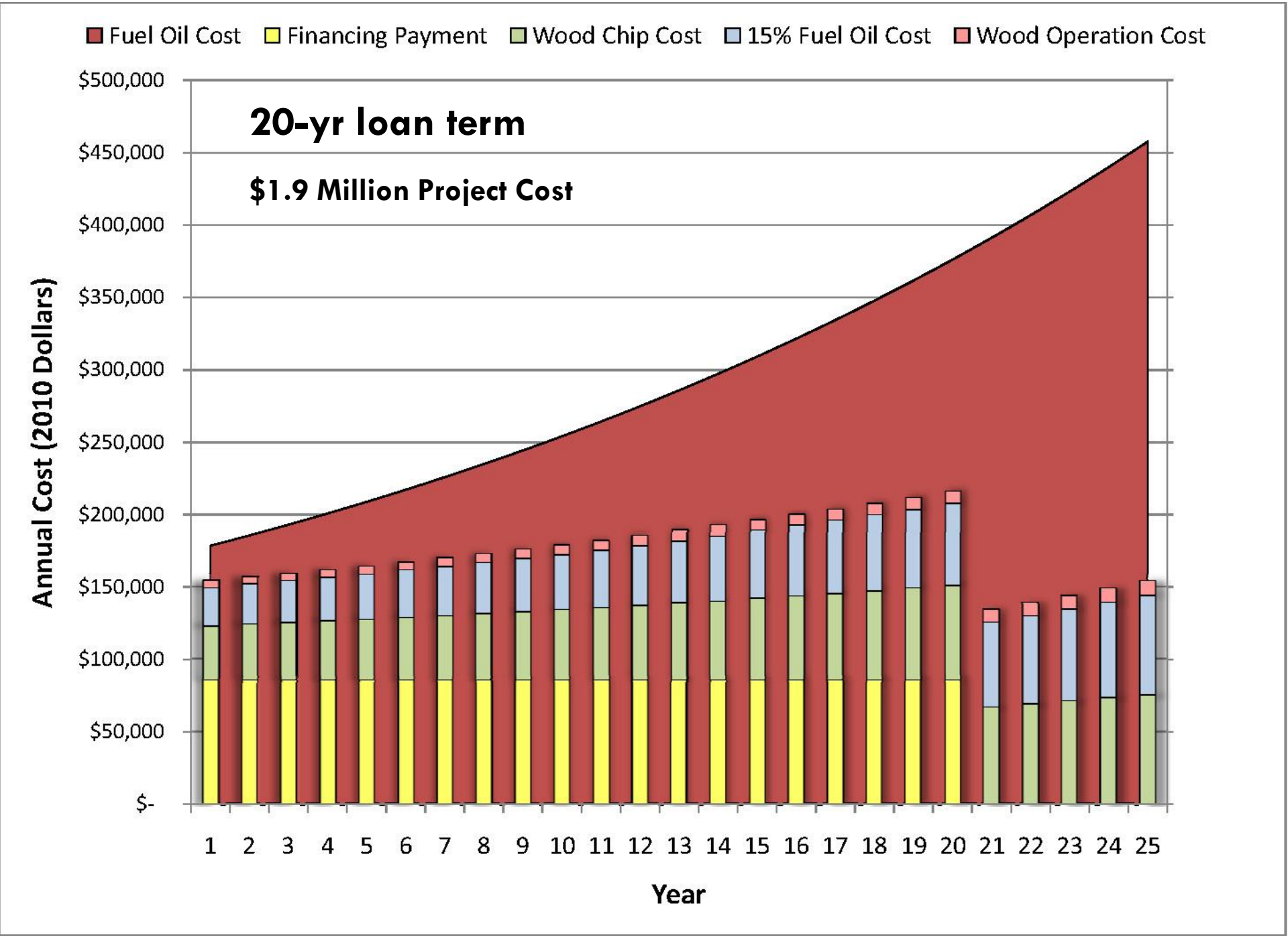
Status of Grants

- USDA NA State and Private Forestry Grant of $200,000 – Awarded
- PEDA Grant of $630,000 (ARRA funds administered by PA DEP) – Awarded
- ACE Grant of $250,000 and Loan of $700,000 (1%, 10-yr) – Application filed, result known in November
- ARC Grant of $55,000 – Application filed, result known in October

- Total of $830,000 in grant funding awarded to date

Financial Approach

- Utilize average annual savings of $115,000 to pay debt service for capital costs
- Loan of $0.6 - $1.1 Million needed
  - Project cost range of $1.5 – $1.9 Million,
- Assumed 5% loan and evaluated 10, 15, and 20-yr payback period


Fuel Oil Cost
Financing Payment
Wood Chip Cost
15% Fuel Oil Cost
Wood Operation Cost
20-yr loan term
$1.9 Million Project Cost
Annual Cost (2010 Dollars)
$500,000
$450,000
$400,000
$350,000
$300,000
$250,000
$200,000
$150,000
$100,000
$50,000
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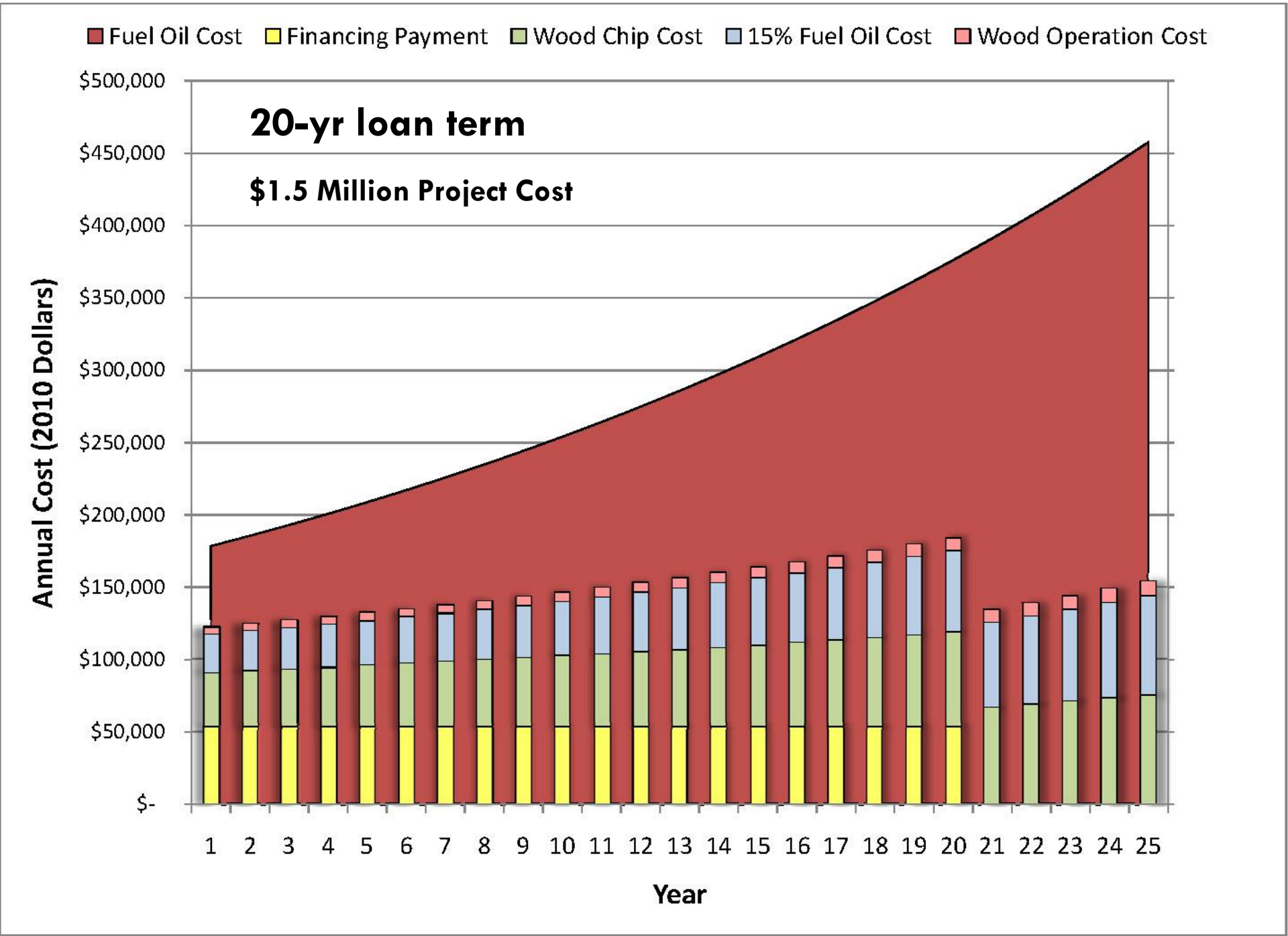
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
Year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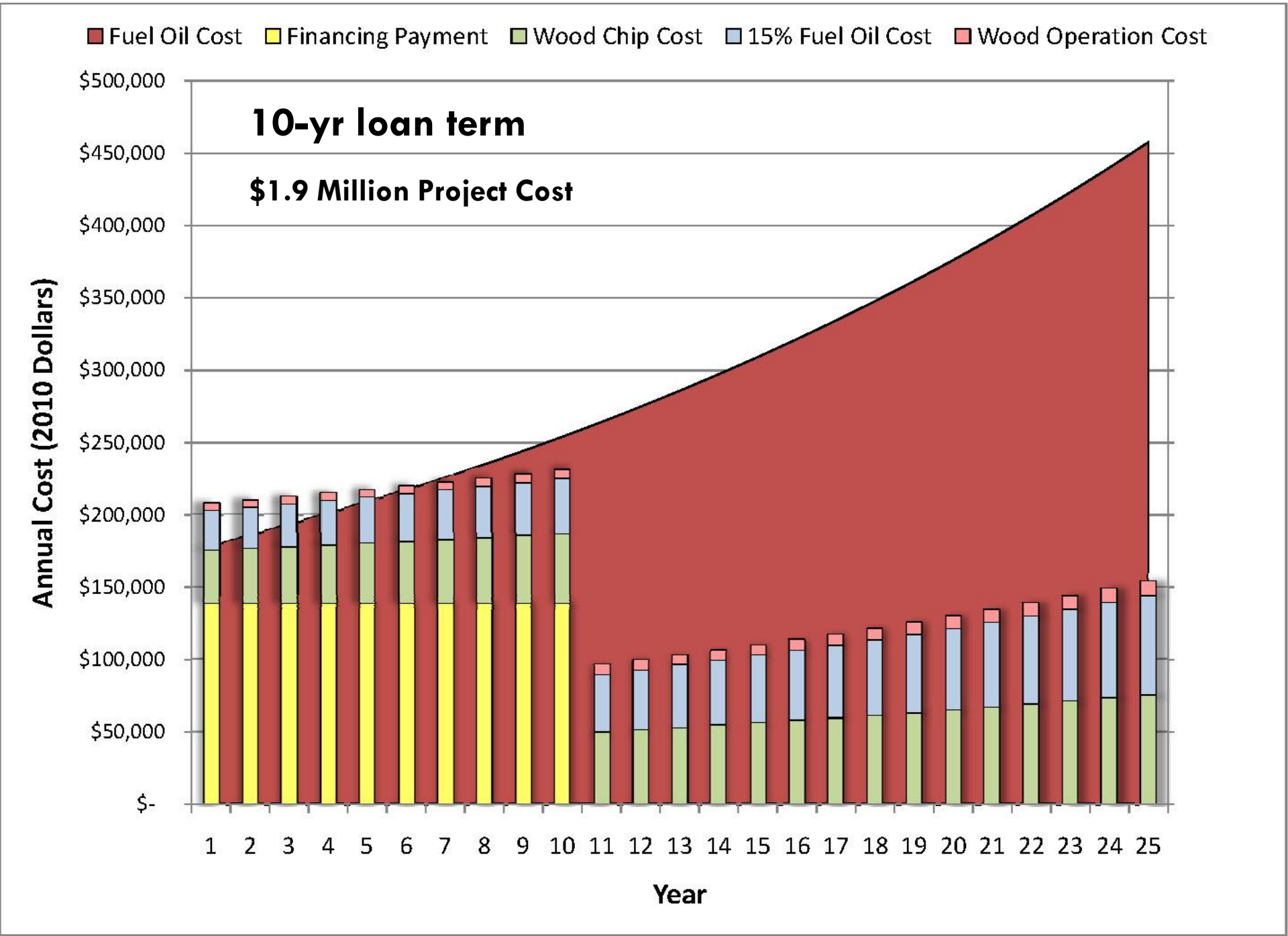
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Annual Cost (2010 Dollars)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
Year

Financial Analysis Results

Project Cost	Loan Term	Amount Financed	Year 1 Cash Flow	25-yr Present Value
$1,500,000	20 yrs, 5%	$670,000	$56,776	**$2,419,249**
$1,900,000	20 yrs, 5%	$1,070,000	$24,679	**$1,927,400**
$1,500,000	10 yrs, 5%	$670,000	$23,770	**$2,480,741**
$1,900,000	10 yrs, 5%	$1,070,000	($28,031)	**$2,025,605**

Major Assumptions

Item	Initial Value	Annual Inflation Rate
Fuel Oil Initial Cost	$2.88/gal	4%
Wood Chip Initial Cost	$42/ton	3%

Analysis	Project Cost	Grant Amount	Financed Amount	Year 1 Cash Flow	25 Year Present Value
5% Interest Rate - 20 yrs					
1	$1,900,000	$830,000	$1,070,000	$24,679	$1,927,400
2	$1,800,000	$830,000	$970,000	$32,703	$2,050,362
3	$1,700,000	$830,000	$870,000	$40,727	$2,173,324
4	$1,600,000	$830,000	$770,000	$48,752	$2,296,286
5	$1,500,000	$830,000	$670,000	$56,776	$2,419,249
5% Interest Rate - 15 yrs					
6	$1,900,000	$830,000	$1,070,000	$7,452	$1,975,539
7	$1,800,000	$830,000	$970,000	$17,086	$2,094,002
8	$1,700,000	$830,000	$870,000	$26,721	$2,212,465
9	$1,600,000	$830,000	$770,000	$36,355	$2,330,928
10	$1,500,000	$830,000	$670,000	$45,989	$2,449,392
5% Interest Rate - 10 yrs					
11	$1,900,000	$830,000	$1,070,000	($28,031)	$2,025,605
12	$1,800,000	$830,000	$970,000	($15,081)	$2,139,389
13	$1,700,000	$830,000	$870,000	($2,130)	$2,253,173
14	$1,600,000	$830,000	$770,000	$10,820	$2,366,957
15	$1,500,000	$830,000	$670,000	$23,770	$2,480,741
5% Interest Rate - 10 yrs + ACE Grant ($250,000 grant, up to $711,340 1%-10 yr loan)					
16	$1,900,000	$1,080,000	$820,000	$21,356	$2,459,420
17	$1,500,000	$1,080,000	$420,000	$66,189	$2,853,321

Summary of Financial Analysis Results

- Amount to finance is between $0.6 Million and $1.1 Million
- All scenarios provide a 25-yr present value of over $1.9 Million to the District
- 10-yr financing near the high end of the cost range would result in a negative cash flow in the first 3-6 years
- 15 or 20-yr financing will provide a positive cash flow from the first year