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3 **VILLAGE OF ANGEL FIRE**
4 **Council Work Session Minutes**
5 **Tuesday July 26th , 2016 at the Village Hall**

6 **Call to Order**

7 Mayor Cottam called the meeting to order at 4:00pm

8 **Pledge of Allegiance**

9 Mayor Cottam called for the Pledge of Allegiance.

10 **Roll Call**

11 Present were Mayor Cottam, Mayor Pro-tem Howe, Councilor Lanon, Councilor Colenda, Councilor
12 Larson. Also present was Village Clerk Terry Cordova, Manager Tafoya was absent. A quorum was
13 present.

14 **Approval of Agenda**

15 Mayor Pro-tem Howe made the motion to approve the agenda. Councilor Lanon seconded. Motion
16 carried 4-0

17 **Council Work Session :**

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19 **1. Presentation by Charles Fiedler with Gordon Environmental / Preliminary Engineering**
20 **Report / Organics Management Study**

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22 Charles Fiedler went over the key points to the study. (see attached)
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26 **Adjournment**

27 Mayor Cottam adjourned the meeting at 4:52pm
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31 **Passed, Approved and Adopted on this 2nd day in August , 2016**

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38 **Barbara Cottam, Mayor**

38 **ATTEST:**

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41 **Terry Cordova, Village Clerk**
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PRELIMINARY ENGINEERING REPORT ORGANICS MANAGEMENT STUDY

VILLAGE OF ANGEL FIRE, NEW MEXICO

ORGANICS MANAGEMENT STUDY

- **OBJECTIVES**
- **EXISTING FACILITIES**
- **NEED FOR PROJECT**
- **ALTERNATIVES CONSIDERED**
- **SELECTION OF AN ALTERNATIVE**
- **CONCLUSIONS, RECOMMENDATIONS, SUMMARY**

OBJECTIVES

- Evaluate the Village slash management program through a review of their financial and logistical records
- Establish a baseline cost to determine the feasibility of alternative slash disposal methods relative to the current activities undertaken to manage the organic materials.
- Benchmark cost of slash management /disposal alternatives for comparison.
- Identify viable, cost effective alternatives for slash disposal.
- Include “sustainability” as an objective of the project; ideally providing “beneficial use” of the organic residuals.

EXISTING FACILITIES

VILLAGE STATISTICS

- 29 Square Miles within the Village
- Population of approximately 1,200
- Approximately 2,500 housing units
 - Approximately 600 occupied (full-time)
 - Approximately 1,400 seasonal residents

ORGANICS MANAGEMENT

- Two collection vehicles
- Slash Collection, April to October
- ~2,000 tons (8,000CY) collected annually
 - Air Burner for disposal (not used)
 - Grinder for volume reduction

NEED FOR PROJECT

- Remote alpine resort community, comprised primarily of forested residential lots
- Years of insufficient forest management
- Significant quantities of organic material required for management
- Limited population to support collection program
- Challenge to manage the anticipated future generation of organic materials
- Limited funding base to recover costs

CURRENT OPERATIONS

SLASH COLLECTION COST

Description	S/hr	Annual Hours	Annual Cost
Labor	\$18.00	600	\$10,800
Truck (Capital)			\$15,837
Truck O&M	\$10.00	600	\$6,000
Truck Fuel	\$40.00	600	\$24,000
		Annual Cost (\$/year)	\$56,637
		Collection Cost (\$/ton)	\$37.76

BENCHMARKED DISPOSAL COST AIR BURNER INCINERATION OPERATING COST

Description	S/hr	Hours/ Year	Annual Cost (\$)
Labor	\$18.00	615	\$11,070
Loader (Capital)			\$6,493
Loader O&M	\$10.00	300	\$3,000
Loader Fuel	\$8.80	300	\$2,640
Incinerator (Capital)			\$11,614
Incinerator O&M	\$ 0.60	615	\$369
Incinerator Fuel	\$13.00	615	\$7,995
		Annual Cost (\$/year)	\$43,181
		Processing Cost (\$/ton)	\$21.59

BENCHMARK COLLECTION AND DISPOSAL COST = \$37.76 + \$21.59 = \$59.35 /Ton

CURRENT ORGANICS MANAGEMENT OPTIONS

MOBARK GRINDER OPERATING COST

Description	S/hr	Hours/ Year	Annual Cost (\$)
Labor	\$18.00	100	\$1,800
Loader			\$1,056
Loader O&M	\$10.00	100	\$1,000
Loader Fuel	\$16.00	100	\$1,600
Mobark			\$36,954
Grinder O&M	\$17.87	100	\$1,787
Grinder Fuel	\$80.00	100	\$8,000
		Annual Cost (\$/year)	\$52,197
		Processing Cost (\$/ton)	\$26.10

REMOTE DISPOSAL COSTS

Destination	Travel Time (Round-Trip)	Haul Cost (\$/Ton)	Disposal/ Process Cost	Transport & Disposal
Wagon Mound Landfill	3.5	\$13.65	\$25.45	\$39.10
Taos Landfill	2.5	\$9.75	\$33.26	\$43.01
Taos Composting	2.5	\$9.75	\$26.10	\$35.85
Chevron Mine	2.5	\$9.75	\$26.10	\$35.85
Santa Fe Composting	4.5	\$17.55	\$26.10	\$43.65
Solutions	6.5	\$23.40	\$26.10	\$49.50

COLLECTION, TRANSFER & LANDFILL DISPOSAL COST = \$37.76 + \$39.10 = \$76.86/Ton

COLLECTION & GRIND COST = \$37.76 + \$26.10 = \$63.86/Ton

BENCHMARK COMPARISON

VILLAGE OF ANGEL FIRE

- Annual Tonnage ~2,000 tons (2015)
- Annual Disposal Cost - \$127,720
- Cost per ton - \$63.86

VILLAGE OF RUIDOSO

- Annual Tonnage -7,724 tons (2015)
- Annual Disposal Cost - \$970,000
- Cost per ton - \$125.58

ALTERNATIVES CONSIDERED

- *Continue the efforts to dispose of the slash with the Air Burners, Inc. incinerator, or identify additional chip disposal locations. (Default case is hauling brush to the landfill in Wagon Mound for disposal)*
- *Continue the efforts with grinding the slash into chips with the Mobark grinder and identify alternative uses for the chips*
- *Continue the efforts with grinding the slash into chips with the Mobark grinder and utilize the chips in the support of an organics composting program that incorporates the chips and other organics generated by the Village (i.e., biosolids, food waste). A complementary effort to utilize the chips would be to develop a “boutique” composting solution that produces a specialty product from the slash (i.e., high fungal compost)*
- *Develop solutions that utilize the slash to produce energy (i.e., hot water or electricity) to replace the electricity or propane that are currently utilized within the Village’s institutions (e.g., High School, Lodge, Country Club, etc.)*

SELECTION OF AN ALTERNATIVE

CURRENT MANAGEMENT COST

Description	\$/Ton
Incineration	\$21.59
Grind to Chip	\$26.10
Landfill @Wagon Mound	\$39.10

MOBARK GRINDER OPERATING COST

Description	\$/hr	Hours/Year	Annual Cost (\$)
Labor	\$18.00	100	\$1,800
Loader(Capital)			\$1,056
Loader O&M	\$10.00	100	\$1,000
Loader Fuel	\$16.00	100	\$1,600
Mobark(Capital)			\$36,954
Grinder O&M	\$17.87	100	\$1,787
Grinder Fuel	\$80.00	100	\$8,000
	Annual Cost (\$/year)		\$52,197
	Processing Cost (\$/ton)		\$26.10

ALTERNATIVES

COMPOSTING OPERATION COSTS

Description	\$/hr	Hours/Year	Annual Cost
Labor	\$18.00	400	\$7,200
Loader (Capital)			\$3,959
Loader O & M	\$20.00	400	\$8,000
Loader Fuel	\$16.00	400	\$6,400
	Annual Cost (\$/Year)		\$26,600
	Processing Cost (\$/ton)		\$13.30
	Product Cost (\$/ton)		\$39.40

PG FIREBOX OPERATION COSTS

Description	\$/hr	Hours/Year	Annual Cost
Labor	\$18.00	400	\$7,200
Loader (Capital)			\$3,959
Loader O & M	\$20.00	400	\$8,000
Loader Fuel	\$16.00	400	\$6,400
PG FireBox (Capital)			\$73,907
Net Energy (Revenue)			(\$4,000)
	Annual Cost (\$/year)		\$95,466
	Processing Cost (\$/ton)		\$47.73

ALTERNATIVES

SHREDDED WOOD CHIP OPERATION

Description	\$/hr	Hours/Year	Annual Cost
Labor	\$18.00	400	\$7,200
Loader (Capital)			\$3,959
Loader O&M	\$10.00	400	\$4,000
Loader Fuel	\$16.00	400	\$6,400
Hammer Mill (Capital)			\$15,837
Hammer Mill O&M	\$10.00	400	\$4,000
Building (Capital)			\$2,759
Utilities	\$15.00	400	\$6,000
	Annual Cost (\$/year)		\$50,155
	Processing Cost (\$/ton)		\$25.08
	Product Cost (\$/ton)		\$51.18

WOOD PELLET OPERATION COSTS

Description	\$/hr	Hours/Year	Annual Cost
Labor	\$18.00	400	\$7,200
Loader (Capital)			\$3,959
Loader O&M	\$10.00	400	\$4,000
Loader Fuel	\$16.00	400	\$6,400
Pellet Mill (Capital)			\$10,558
Pellet Mill O&M	\$10.00	400	\$4,000
Utilities	\$15.00	400	\$6,000
	Annual Cost (\$/year)		\$42,117
	Processing Cost (\$/ton)		\$21.06
	Product Cost (\$/ton)		\$72.24

ALTERNATIVE OPERATIONAL COSTS

Alternative	Cost (\$/Ton)
Alternative 1 - Current Operations	
Incineration	\$21.59
Wagon Mound Landfill	\$39.10
Grinder	\$26.10
Alternative 2 - Wood Chips	
Local	\$26.10
Chevron Mine-Questa	\$35.85
Taos Composting	\$35.85
Santa Fe Composting	\$43.65
Sollutions-Albuquerque	\$49.50
Alternative 3 - Composting	\$39.40
Alternative 4 - Energy and Fuels	
PG FireBox	\$47.73
Shredded Wood Chips	\$51.18
Wood Pellets	\$72.24

Worth \$148/ton

Worth \$192/ton

Worth \$250/ton

CONCLUSIONS

- **Challenges**
 - 2,000 Tons per year slash collections
 - Could be as much as 8,000 Tons per year
- **Limitations**
 - 2,000 Tons per year slash collections
 - **Viabale business opportunity**

RECOMMENDATIONS

- Continue Current Operations
- Expand Search for Chip Uses
- Promote Availability of Chip
- Support Sustainable Chip Utilization
- Monitor Regional Chip Utilization Projects

SUMMARY

- Current Operations are Cost Effective
- Current Operation Sustainable
- Cost of Operation Covered by Wildfire Protection Fee
- Increased Slash Collection Enhances Forest Health
- Increased Slash Collections Challenge Funding and Sustainability