

City of Flagstaff

Public Works-

Solid Waste Section

2018 Solid Waste Plan



Overview

The Solid Waste Plan provides Leadership with a general overview of the Solid Waste program and provides justification for capital expenditures over the next five years.

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Executive Summary

In 2014, Flagstaff City Council (Council) adopted a set of goals for the community. One of the goals was to provide sustainable and equitable public facilities, services and infrastructure systems in an efficient and effective manner to serve all population areas and demographics. The City of Flagstaff Solid Waste Section (Solid Waste) responded to the goal by proposing the adoption a comprehensive Solid Waste Master Plan by FY 15. The current Council goals plan for developing and implementing a comprehensive Climate Action Plan.

The SWP will act as a living document. A list of goals has also been proposed for the program. The goals are merely an example of the most relevant drivers of policy as determined by staff. Any changes or additions to the existing program should be carefully vetted out through the Solid Waste Plan.

The Solid Waste Section offers a wide-range of residential and commercial trash collection services within the boundaries of Flagstaff. In addition, Solid Waste also extends limited services to Coconino County residents and businesses. While the financial outlook for Solid Waste remains fair, staff continuously adjusts its projections based on environmental regulations and market trends.

With approximately 40 years of available airspace remaining at Cinder Lake Landfill (CLL), the facility assumes the role as the only regional landfill within the County. Although CLL is a favorable asset to the City, the facility will be required to absorb considerable costs for the future landfill gas collection infrastructure. Ultimately the new Environmental Protection Agency (EPA) rules could impact the program by as much as \$19 million over a five year period.

Although we are seeing noticeable growth in Flagstaff, the Solid Waste Program will need to adjust for the loss of \$800,000 in annual revenue that came from the disposal of paper millings from SCA Tissue. Other unforeseen impacts to the Solid Waste budget include the bond for funding the Core Services Yard (\$200,000 annually for 30 years). In response to these shortfalls, staff is in the process of preparing justification for a rate increase.

The City efforts to increase diversion (recycling and reuse of materials) are a high priority for extending the life of CLL. However the state of the recycling industry is in flux due to the recent restrictions placed by China. Staff will continue monitoring the affects this has on the success of the Norton Environmental Material Recovery Facility.

With such a wide range of variables coming down the pipe, staff wishes to concentrate its efforts on providing an exemplary level of service that the Citizens of Flagstaff and Coconino County have come to rely on. Meanwhile we wish to remain cautious about implementing new programs without fully vetting the cost-benefit to the City as a whole.

1 Operations Summary

This section provides an overview of current services and the opportunities for growth within Solid Waste Section (Solid Waste).

1.1 Structure of Solid Waste Program

Solid Waste currently maintains the following operations:

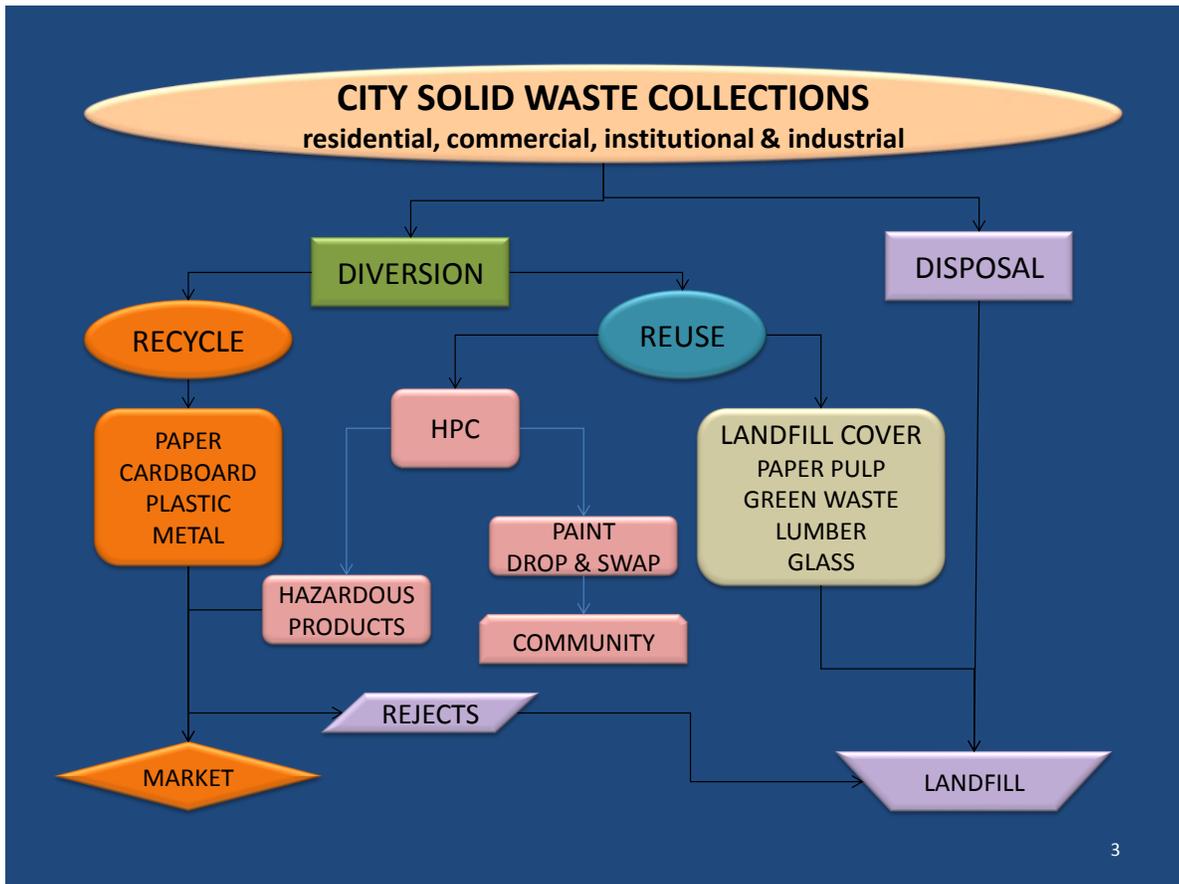


Figure 1-Solid Waste Structure

Landfill

CLL is the only permitted landfill within Coconino County. The facility is open to the public 6 days a week throughout the year from 7:00am to 4:30pm Monday thru Friday and 7:00am to 4:00pm Saturday. The current rate of trash disposal is 325 tons per day.

City residents are allowed to dispose of bulky items (non-construction debris) for free, while County residents are charged a rate of \$20 per load (must be under 1 ton of waste). Otherwise, the tipping fee is \$44.42 per ton.

There is also a residential drop-off site for County residents to bring recyclable waste products (paper, cardboard, metal, glass, and plastic). We also provide free wood chips to residents to haul on their own.

There is currently not enough soil to cover the entire landfill through its operational life (approximately 40 years). For seventeen years. Paper millings from SCA Tissue (Flagstaff) were successfully used as

Alternative Daily Cover (ADC). However, since June 2017 SCA closed operations indefinitely. Although there are no sources of ADC coming into the site anymore, there are approximately 4 years of surplus ADC on site. If we envision other forms of ADC, we can maintain the valuable surplus and decrease our soil deficit. Therefore, staff proposes the use of portable tarps in the FY19 budget.



Figure 2-Portable Tarp as ADC-Photo provided by Tarp Armor (Tarp Armor, 2017)

Staff is continuously reviewing other potential sources of ADC. For instance, since 2012 staff has received an average of 2,700 tons of reconstruction debris (concrete, block, and steel). The bulk of which consists of concrete and other crushable material. Reconstruction debris has traditionally been buried in designated cells at CLL. However, the remaining space for those cells are decreasing due to the influx of construction debris. In the future, we may propose hiring a contractor to crush future stockpiles of concrete. Subsequent to crushing, the material would be approvable as a source of ADC.

Hazardous Product Center

The Hazardous Product Center (HPC) accepts approximately 8 tons of household chemicals from County and City residents every year. In addition, we collect electronic waste (e-waste), batteries and other universal waste.

Residential Trash Collection

The residential trash collection program is responsible for servicing some 17,000 homes weekly. Currently, the City is divided into 4 sections, or routes. Service days are Monday, Tuesday, Thursday, and Friday. The 4 operators who collect these areas work 10-hour shifts, Monday thru Friday.

Bulky Trash/Woodwaste

This program is responsible for the curbside collection of household bulky items as well as tree limbs, yard waste, etc. The work is performed by 2 trucks with 2 operators each. The trucks are loaded with an articulated loader, purchased in FY 09/10. The loader increased productivity and efficiencies, allowing for collaboration with Flagstaff Fire Department to remove slash piles from forest thinning projects. Capture of this green waste reduces carbon emissions due to burning as well as providing valuable Alternative Daily Cover for Cinder Lake Landfill.

Commercial Trash

This program collects trash from commercial businesses, apartments and town homes. The operation runs 7 days a week. The operators work 10 hr shifts with staggered off days in order to provide route coverage and meet customer service expectations. Since 2015, Arizona Senate Bill 1079 prohibited municipalities from excluding private solid waste haulers to enter the multifamily residential properties. At this point, the bill has only slightly affected the City commercial trash services. However as more multi-family housing is coming online there is potential that the City may loose out on valuable contracts in the future.

Residential Bin Maintenance

This program is responsible for the delivery, pick up, cleaning, and repair of residential curbside containers. Other duties include special events, collection of white goods (weekly), collection of move-in boxes, pre-baled cardboard, pick up and disposal of dead animals from Flagstaff's streets (dogs, cats, skunks, deer, etc.), snow removal when needed, and the operation of any and all solid waste collection vehicles when needed. The position may respond to customer "emergencies" after hours or on weekends.

Commercial Bin Maintenance

This program is responsible for all commercial and roll off container deliveries, repairs, painting and cleaning. Other duties include welding, fabrication, and design, delivery and pick up of temporary bins, repairs and fabrication of gates, enclosures, etc. The position has a high degree of interaction with internal and external customers on a daily basis, and is a large factor in customer satisfaction & retention. Both bin maintenance programs respond to customer requests within 24 hours and we typically are able to provide same-day service. The position is also required to operate solid waste collection vehicles when needed.

Hoist & Haul (Roll Off)

This program services commercial and residential customers with a variety of needs. Construction materials, clean ups, grocery store and food service compactors(including NAU and Flagstaff Medical Center), recycling, and glass recycling drop off locations are all a part of this program. The program currently has 2 assigned operators who run Monday thru Friday, with some Saturday and Sunday pulls by request. The operators work a 5 day, 8 hour schedule in the fall and winter months when activity is slower. During the busy season they work 4 -10 hour days.

Residential Recycling and Commercial Recycling

The residential curbside recycling program operates much like the residential trash program, with approximately 17,000 homes to service. Meanwhile, the commercial program operates in such a manner that it picks up specific loads from recycle dumpsters Monday thru Saturday and partially on Sunday.

This program is similar to the commercial trash program, with the exception of the schedule. Recycling collection is currently Monday- Friday. As volumes increase, Saturday collection may be considered.

In July, 2017 the Chinese Ministry of Environmental Protection announced to the World Trade Organization that as of January, 1, 2018 they would no longer accept contaminated paper/cardboard and plastic. Because China is the largest importer of recycled materials, the industry is being turned on its head. Although we are not familiar with Norton Environmental's filtration rate, it's unlikely that their current equipment is able to achieve contamination rates that brokers will demand. In light of these restrictions, staff is concerned about the fate of the Material Recovery Facility (MRF). We will continue to monitor the situation in China and the MRF over the next few months.

Glass Collection

In addition to the four city glass drop-off sites and CLL, Collections offers glass collection to residential customers on a subscription basis (\$3.55 / month).

Administration

The administrative staff handles all dispatch and phone calls from the public. In addition, they provide support in accounting and book keeping for the program. Administrative staff are posted at the Public Works Yard and Cinder Lake Landfill.

Program Assistant- Sales

This position is responsible for increasing our market-share in all commercial programs, increasing the volume of recyclables collected, and providing excellent customer service. The position helps to provide services to meet customer demands, “right size” service levels, and provide information on all services.

2 Budget

2.1 Solid Waste Program

The budget presented in this section demonstrates a balance between responsible fiscal policy and environmental stewardship over the next five years. The Solid Waste program has remained financially solvent due in part to the anticipation of changes in solid waste disposal rates both locally and at a regional level. This is reflective of consumer spending habits and inflation. Consequently, the Solid Waste program projects growth rates based on the Consumer Price Index (CPI) for the Western Urban region (United States Department of Labor, Bureau of Labor Statistics, 2017), which is currently at 3.2% and rising.

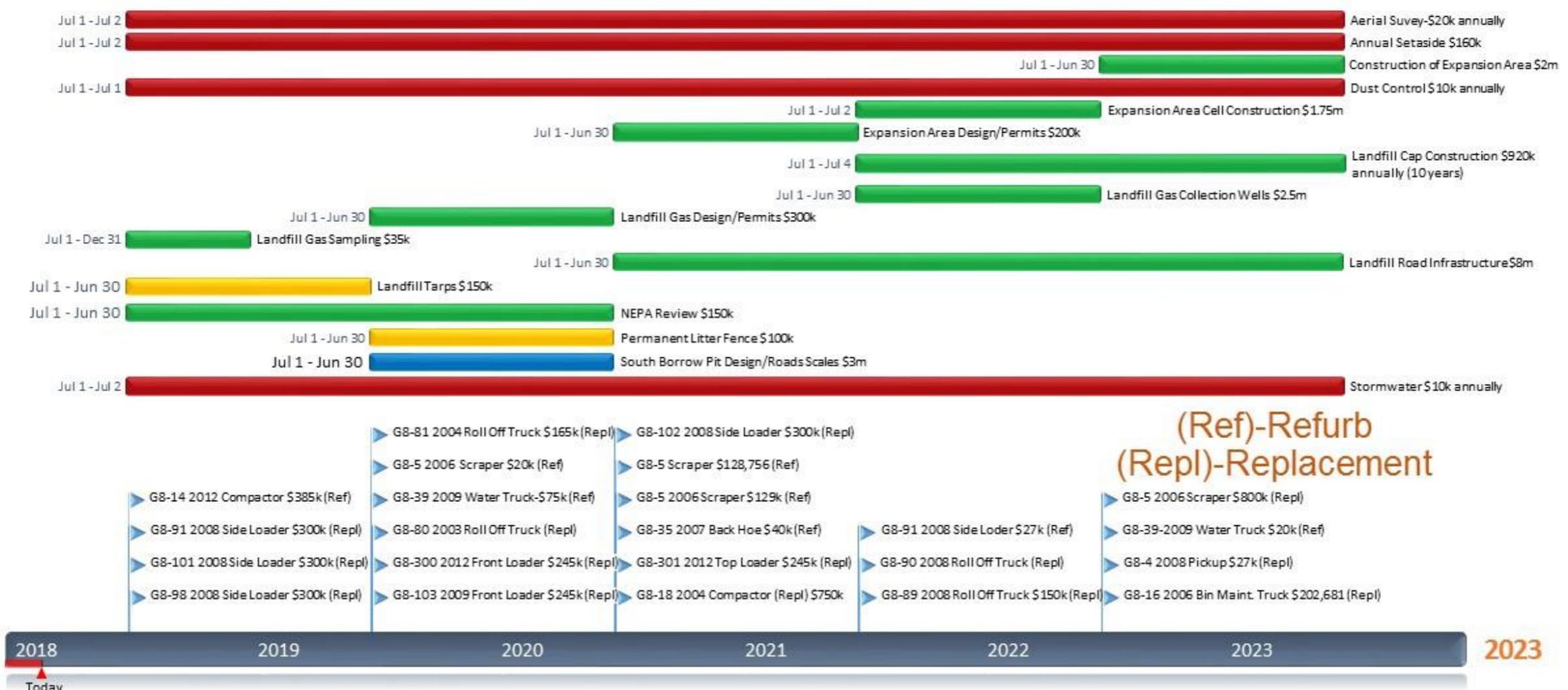
Since 2014 CLL has seen an average of 3.7 % increase in tonnage of solid waste received. And while staff is able to adjust its operation to accommodate variable consumer disposal trends, a baseline budget is required to accommodate capital expenditures and maintain minimum operational standards. Our baseline budget is ranked on the following two conditions:

- 1) Will the budget allow staff to run the Solid Waste with the necessary facilities, machinery, and equipment while keeping the operation safe and in compliance?
- 2) Does the budget keep CLL in compliance with existing federal EPA requirements?

Over the past ten years, Solid Waste has been planning for the eventual expansion of Cinder Lake Landfill along with the replacement of fleet capital. While these expenditures are expected to impact Solid Waste, our projected fund balance never dipped below ten percent of the annual budget (required for enterprise funds). However, the following unforeseen elements will present challenges in the coming years:

- The loss of \$800,000 revenue from SCA Tissue
- \$5 million bond for Core Services Yard (on going \$210k expenditure)
- The EPA rule change for landfill gas infrastructure (projected costs are \$6.6 million for utilities and \$18 million for the cap)

Figure 3 Shows at timeline of the five year plan.



SOLID WASTE PROGRAM PROPOSED 5- YEAR PLAN

Figure 3-Five Year Plan

2.1.1 Collections Program

Budget projections- Collections staff has budgeted flat for FY19, with minor adjustments between line items and overtime projections to account for position vacancies, fuel costs and Fleet Services rate adjustments. Residential collections are expected to increase the coming years especially in high density in-fill areas for student housing. Staff is in the process of completing a rate study for Collections and the Landfill. An increase in the residential monthly trash bills will be justified to accommodate the \$5 million withdraw over 20 years (approximately \$300,000 per year) to fund the shortfall from the Core Services Yard. The results of the study will be published by spring 2018. The proposed Collections budget items for FY 19 include:

- Replacement of 3 American LaFrance Side Loaders-\$300k each

2.1.2 Landfill Program

The most-immediate impact to the Solid Waste budget is the loss of revenue resulting from the closure of SCA Tissue. While staff has remained aware of the tentative nature of the SCA contract, we could not have predicted the abrupt closure in June 2017, which will lead to an annual decline in revenue of \$800,000 at CLL. In order to maintain a certain level of operational efficiency staff is recommending the incorporation of rolling tarps as ADC.

Another element that could affect Solid Waste in FY 19 involves new requirements for landfill gas emissions, as was recently promulgated by the United States Environmental Protection Agency (EPA). In the past, CLL air quality models predicted landfill gas emissions would not exceed regulatory thresholds until 2034. However, EPA recently lowered the emissions threshold levels, which could require the City to install a landfill gas collection system by 2021 (Section 3). Although the new threshold was already adopted within the Code of Federal Regulations (CFR), the solid waste industry is now requesting EPA to clarify certain methodologies within the rules. In response, EPA announced a stay until the language in the CFR can be clarified. We expect that the EPA will provide clarification of the rules in 2018.

In the meantime staff is preparing for the implementation of the new rule. The rule directly impacts our budget because three-phase power will be required and we currently have only single-phase power at CLL. Preliminary designs indicate the extension of power, in addition to utility improvements will cost the City approximately \$6 million. Over the next year staff will work with the Finance Section to determine how best to fund the expenditures over the long-term. In the meantime, we will be submitting an infrastructure plan to the Forest Service through the National Environmental Policy Act (NEPA). The proposed CLL budget items for FY 19 include:

- Landfill Compactor Replacement-\$350k
- NEPA Review for Infrastructure at CLL-\$150k
- Annual Setaside Fund for Landfill Closure (on going)-\$160k
- Portable Tarps-\$100k
- Stormwater Infrastructure-\$10k
- LIDAR Flyover-\$10k
- Landfill Gas Sampling-\$35k

3 Regulatory Compliance at CLL

3.1 Maintaining Regulatory Landfill Compliance

Maintaining regulatory landfill compliance for CLL typically comes with a fixed annual cost to the program (unless unforeseen exceedances occur). There are two employees in Solid Waste that manage employee training, environmental monitoring and reporting activities for CLL. Staff dedicates approximately 750 hours per year to ensuring that CLL remains within the federal and state regulations as discussed in the following sections.

The solid waste industry is actively involved in the new standards and requirements promulgated by the EPA (discussed in Section 2), and they support EPA goals to streamline the standards to allow effective implementation of Gas Collection and Control Systems (GCCS), while avoiding the establishment of new requirements deemed neither cost effective nor focused on reducing landfill gas emissions.

3.2 Clean Air Act and New Source Performance Standards

The 1970 Clean Air Act was enacted to control and reduce air pollution for the protection of public health. The law requires EPA to establish air quality standards based on the latest science and requires states to adopt enforceable plans to achieve the standards for stationary sources, such as a landfill.

Section 111 of the Clean Air Act authorizes the EPA to develop technology-based standards that apply to specific categories of stationary sources. These standards, which were adopted in 1996, are referred to as New Source Performance Standards (NSPS) and Emission Guidelines (EG) are found in 40 CFR Part 60.

3.2.1 Environmental Standards for Municipal Solid Waste Landfills

The provisions of 40 CFR Part 60, Subpart WWW apply to landfills that commenced construction, reconstruction or modification on or after May 30, 1991. In 2016, the EPA proposed revisions to the 1996 rules for lowering the thresholds for EG's. The 1996 rules required GCCS to be installed for landfills that exceed 50 Metric Tons per year (MT/yr) of Non-Methane Organic Compounds (NMOC). However the revisions lowered those emissions to 34 MT/yr.

The revised rule includes operational flexibilities such as the utilization of site specific Surface Emissions Monitoring (SEM), otherwise known as Tier 4 procedure for landfills that emit between 34 and 50 MT/yr. In this case, the Tier 4 SEM procedures would be conducted for 4 quarters. Subsequently, if on an annual basis the landfill can demonstrate its methane concentration is less than 500 parts per million (ppm), then a GCCS is not required. If 500 ppm of methane is exceeded, then a GCCS shall be installed within 30 months of the reported exceedance.

In all likelihood, CLL will exceed the new thresholds. However implementation of the rules has been stalled though the EPA as discussed in the next section.

3.2.2 New Federal Rules – Stay and Effect

On July 14, 2016, the EPA Administrator proposed rules for revising the 1996 NSPS and EG's. Subsequently on October 27, 2016 representatives from the solid waste industry submitted a letter to the EPA raising objections over the definitions and methodologies within the rule. In response the EPA replied to the solid waste industry on May 5, 2017, where the EPA Administrator announced a 90 day stay for "reconsideration of certain requirements in the final rules" (Pruitt, 2017). Although the stay has expired, the EPA and solid waste representatives are meeting to reconsider and redraft significant

portions of the rule. Staff has been in contact with our legislative liaison to assess when the rules will begin to take effect. However there is no outlook as to when the revisions will be re-submitted for public comment.

4 Infrastructure

Operational expenditures in Solid Waste have traditionally been scheduled around fleet rotation and minor capital expenditures. While fleet capital is still an active part of the conversation, much of the focus has been diverted to large capital projects driven by both environmental regulations along with the funding of the Core Services Yard.

4.1 Collections

Although the projected costs for the Core Services Yard are established, there will likely be one-time costs for moving the equipment and supplies to the Core Services Facility. In addition, City vehicles will be driving approximately 30,000 miles annually (based on 20 trucks) in addition to the miles that they used to drive.

4.2 Cinder Lake Landfill

CLL is currently investigating the long-term infrastructure needs with respect to both compliance and operations. Compliance-based infrastructure requirements have many contingencies and are likely to be driven by revised air quality rules in the next couple years (see previous section).

Note that the project costs are preliminary, and will be refined as the design requirements are better-identified from within the specifications of the United States Department of Agriculture, Forest Service (Forest Service). In the meantime, Plateau Engineering, Inc. is under contract with the City to explore the design constraints and projected costs for implementation of infrastructure discussed below.

4.2.1 Roadway Drainage Improvements, and Traffic Control

Asphalt pavement along Landfill Road (Road) is nearing its useful life and is beyond salvage (Speedie and Associates, 2017). The right of way is under the jurisdiction of the Forest Service. While the City was granted the use of the Road under a Forest Service Special Use Permit (SUP), the SUP has been expired for many years and needs to be revisited in the future permit submittals.

The Road is maintained under a joint agreement between the County and the City. However it does not meet the federal standards of the Highway Safety Act and the Manual on Uniform Traffic Control Devices (MUTCD). Redesign of the Road requires widening to accommodate additional shoulder widths, drainage, side-slopes, and utility boxes. In addition, construction will require additional accommodations for traffic control and temporary equipment storage. The projected costs for roadway, drainage improvements, and traffic control are estimated to be \$2.5 million. However, before any improvements can take place the project requires review by the Forest Service under NEPA. The timeline for this process is approximately three to five years.

Although no requirements from ADOT have been discussed, there may be other modifications necessary to accommodate future volumes of heavy traffic onto State Route 89 (SR 89). The most costly modification includes the extension of a right turn lane 540 feet along the northbound side of SR 89.

4.2.2 Power and Telecommunications

Currently CLL uses single-phase power thru Arizona Public Service (APS). In FY 2012, CLL used approximately 89,000 kWh of power, which cost approximately \$14,000. This is a relatively small amount of consumption given the nature of the work at CLL. However when a landfill gas extraction system is deployed at CLL, three-phase power would have to be extended to CLL from the east side of Highway 89. While running 3-phase power underground, it would be in the best interest of the City to consider installing telecommunications lines in the same trench. With that said, the right of way will limit traffic control along the Road, and it will be especially challenging when utilities placed. Plateau Engineering's sub-consultant estimates the cost for three-phase power with telecommunications at approximately \$1.7 million.

4.2.3 Water

Currently CLL relies on bi-weekly deliveries of potable water for its domestic needs. In the future, it will be necessary to have a reliable source water for fire and dust suppression. A six-inch diameter waterline extend 1.6 miles from to an existing tee to CLL. Doney Park Water production rates do not provide enough pressure to suit the needs of the daily operations, therefore a booster pump and storage tank(s) will be necessary to provide reliable volumes of water to the facility. The projected cost for the waterline would be approximately \$1.5 million.

4.2.4 Shared Costs

Shared costs include all necessary forms of environmental protection, traffic control, survey, and construction oversight. The total anticipated shared costs are estimated to be \$900,000.

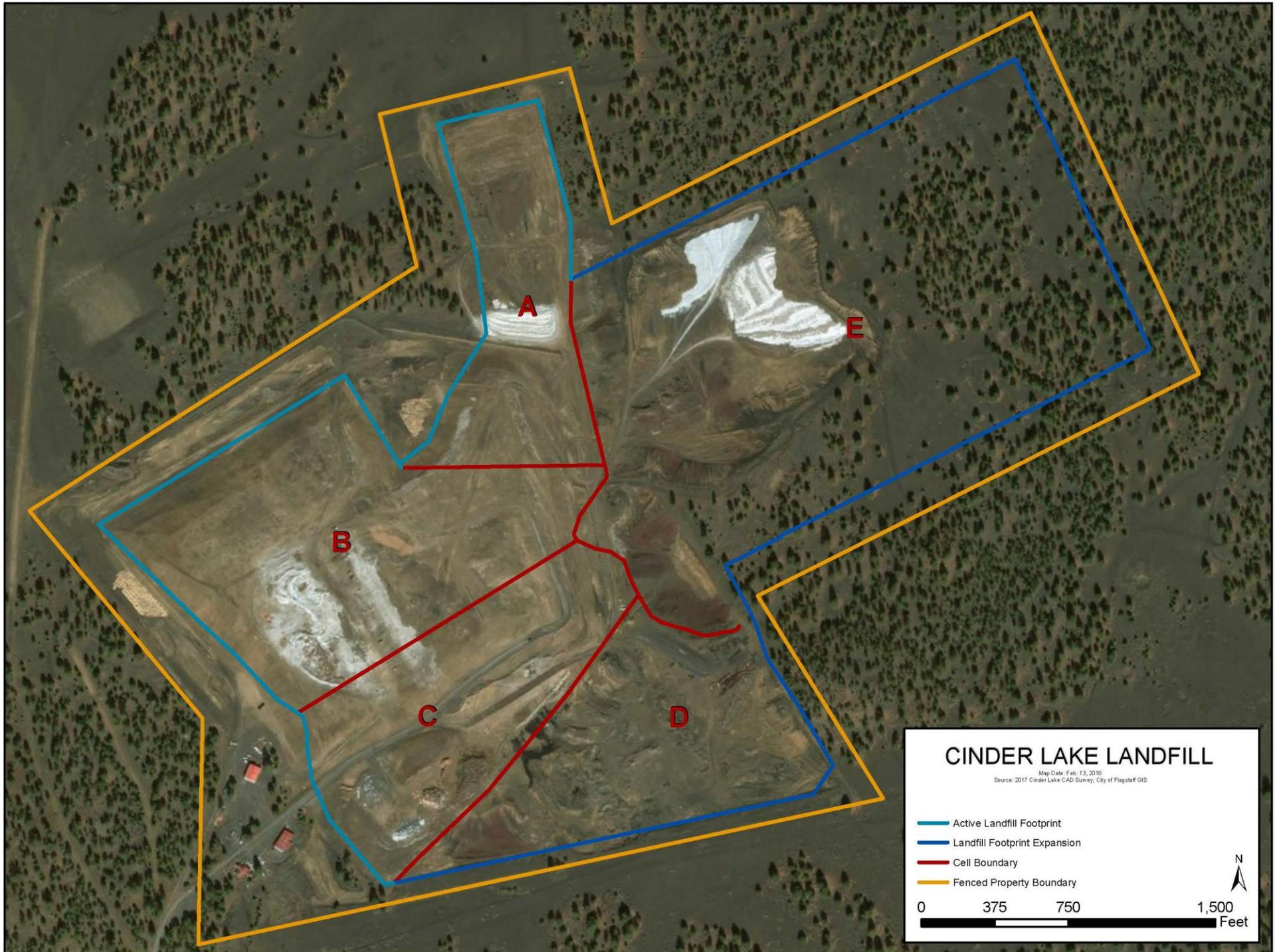
4.2.5 Landfill Cap

Although the landfill cap will occur subsequent to the construction of landfill gas infrastructure, it is a necessary element when considering the optimal collection and treatment of landfill gas. Therefore, the expenditure is likely to be on the horizon, but that will depend when the EPA lifts the stay on the new regulations. The costs for landfill capping (based on the current design) are estimated to be \$18 million over a period of ten years.

5 Other Projects Outlined in the 5 Year Plan

Five cells are designated for landfill disposal activities at CLL. The cells (also known as sequences) are labeled in the existing design as Cells A through E (Figure 5). Sequences A thru C (110 acres) are where MSW has been historically disposed since 1965. Even though the cells are not lined, the landfill was permitted to continue placing MSW within Sequence A thru C. When the sequences are completed, they will have to be finished off with a cap that falls within guidelines. Sequence A thru C will last another 7 to 10 years (depending on growth rates). Expanding the operation to Sequences D and E (136 acres) will require the facility to follow guidelines for design and construction of landfills with an approved liner. The expected closure of CLL is to occur near the year 2054.

Figure 5-Map of CLL



5.1 Phasing and Construction Plans

The existing design shows an overall sequencing plan for the development of the landfill. However, it does not specify the manner in which each sequence should be phased over time. Over the next fiscal year MSW will be placed at the maximum design elevations within portions of Sequence B. When constructing the maximum design elevations, it is essential to have a clear strategy for the placement of MSW. Therefore, engineering staff will be working with the landfill manager and supervisor to design roadways, stormwater controls, and develop an overall plan for phasing each cell. The relevant portions of sequencing and phasing will be noted and diagrammed in the Solid Waste Plan.

5.2 Gaining Efficiencies in Future Sequences

Although the closure of Sequences A thru C will not occur for approximately 7 years, it is necessary to start planning for future infrastructure needs. In consideration of the future construction, staff is exploring how we may be able to incorporate advanced technologies that would not only provide positive financial returns, but would also help subsidize the development of future sequences. In 2013 CLL investigated the beneficial uses of landfill gas for alternative fuel vehicles utilizing compressed natural gas (CNG) (Geosyntec Consultants, 2013) . The study determined that there was a potential benefit in converting certain fleet over to CNG with the contingency that all fleet vehicles would be stored at Cinder Lake Landfill.

Throughout the solid waste industry, landfills are searching for beneficial reuses of readily available sources of construction and demolition debris (Bratkovich, 2014). Grinding and pulverizing of debris such as wood and concrete respectively, can potentially conserve landfill airspace while providing a reliable resource for operational cover material. We know that there is a deficit of 1.3 million cubic yards in soil cover at CLL. Therefore, it is in the best interest of the facility to continually explore other cover resources for the facility. While we already grind lumber and green waste on site with City equipment, it may be worth stockpiling concrete in designated areas around CLL. Once stockpiles are adequate, we could go out to competitive bid for crushing of concrete. A project similar to this is successfully underway in Prescott. The project is scheduled to go back out to bid in early spring, Staff will keep monitoring the progress of the project.

5.3 Excavation of Sequence D and E

Prior to identifying advanced technologies, it is necessary to determine where the existing design could be improved. The CLL Solid Waste Facility Plan acts as the guiding construction document and prescribes excavation depths within the future expansion areas (Cell D and E). The depths established by the engineer of record were based on the elevations for marginally rippable (extractable) rock, as determined by drillers' logs and geophysical surveys. The engineer assumed that the desirable method of excavation was through mechanical removal by bulldozers and excavators with minimal blasting. Since that time there have been multiple excavations performed on-site. In addition, staff determined drilling and blasting will be a more practical method to successfully extracting rock and soil from the site.

In fall 2012, CLL embarked on an extensive drilling and sampling operation (Speedie and Associates, 2013). The mission of the project was to determine whether it was feasible to drill and blast below the prescribed elevation within Cell D. Results from the study indicate that excavation below the design elevation is potentially feasible based on the following considerations:

- The in situ rock is a potentially valuable resource to consider as aggregate for future applications in roadway construction for the region. The nearest source of aggregate is located approximately 40 miles north of Flagstaff at the CEMEX Gray Mountain Plant.
- The “slag” generated from processing rock would decrease the existing soil deficit (1.2 to 2.6 million cubic yards).

Staff concluded that the existing design depth could be exceeded by as much as 20 feet. However, the operation would need to consider mining portions of buried MSW within Cell C to achieve such elevations (additional discussions in Section 8 pertain to landfill mining). The additional airspace gained over that time is likely to result in another three to five years of landfill life. Based on this information, staff concluded that additional investigation is warranted.

The next stage will be to prepare a phasing and staging diagram for processing aggregate and soil. Then staff will work with a qualified contractor and obtain accurate cost estimates for excavating, processing, and determining future regional public works projects requiring large volumes of aggregate. Staff will use the cost estimates to prepare a comprehensive cost benefit analysis. The study will result in a comprehensive proposal for Leadership to consider for future development of the site. Although excavation is not required for another decade, the planning, staging, and sale of aggregate could take years to complete.

5.4 Alternative Cap and Liner Designs

Current cost projections for capping the existing cells at CLL will be approximately \$18 million. In 2012 staff collaborated with Northern Arizona University College of Engineering and Natural Sciences (NAU) to conduct preliminary studies on the use of paper millings (SCA Tissue) as a landfill cap (see Section 8). The material deemed to be favorable when used with binders like coal ash. Northern Arizona University conducted additional research in May 2017 to determine optimal mixtures with paper millings and other binders (Slim, 2017). However in June, 2017 SCA Tissue terminated its contract with the City, as they decided to close the plant indefinitely.

Since the closure of SCA tissue landfill staff are in the process of researching other regional sources of materials that could be used as an alternative cap or liner. We are also exploring other sources of clay from outlying areas such as the Verde Valley. It has yet to be determined if the costs of transportation outweigh the beneficial use, and we will be vetting that out over the next year.

6 Other Programs Supported by Solid Waste

The Solid Waste program provides ancillary benefits to programs within the City limits and beyond. The following activities or programs are just some of the examples of support the program provides the following services:

County Cleanup Day

Each year from late May thru early June, the County issues a one-time voucher to County residents allowing them to dispose of MSW at no charge. Because the County tracks customer usage during this time, the project requires an increased level of administrative support from CLL.

Free public mulch

The public is free to pick up wood chips at the City Public Works Yard and CLL. The mulch is provided by various contractors who occasionally dispose of clean wood chips. The wood chip pile is maintained by CLL staff throughout the year.

Sustainability and Environmental Management Section

Projects that receive (or have received) direct support from Solid Waste include the following:

- Promotional mailings for recycling
- Manpower for collection and cleanup wildcat dump sites
- Public service events involving a community cleanup day

All other SEMS related events involving the need for solid waste and recycle bins

Flagstaff Fire Department Fuels Management Program

CLL has provided multiple levels of service for the fuels reduction program throughout the past.

Subsequent to tree thinning, CLL provided heavy equipment for grading, site access, and tree chipping and removal. Equipment provided in the past included:

- Motor Grader
- Front End Loader with grapples
- Tree Chipper/Shredder
- Dump Truck

7 Municipal Solid Waste Diversion

Staff is working with SEMS to prepare a plan for increasing diversion of MSW from the waste stream.

The plan, also known as Rethink Waste, has a great deal of momentum within SEMS and Council.

Therefore staff will be assisting SEMS to develop long-term initiatives that are intended to act as a framework for developing financially sustainable programs and services that increase material diversion and prevent waste (City of Flagstaff, AZ, 2017).

8 Conclusion and Recommendations

The framework of the Solid Waste Section demonstrates a multitude of services that are offered within the community and the region. The financial outlook for the program remains optimistic, and staff will continue to make necessary adjustments as the local and regional economy will allow. Environmental compliance is also essential to assuring the program remains a viable disposal option in the region for years to come. Management remains committed to balancing fiscal responsibility and environmental stewardship for the City and the region. Staff expects that the SWP will be a mechanism for management to communicate how it intends to achieve this balance over coming years.

Although the economy appears to be favorable for the coming year, the Solid Waste program continues investigating where efficiencies can be realized. Staff is also in the process of exploring options for supplementing the loss in revenues due to bonding and closure of SCA Tissue. We anticipate completion of a rate study in spring, 2017.

Although landfill emission rules are currently in limbo, staff will continue planning for eventual implementation of landfill gas collection and controls. The project requires us to collaborate with the Forest Service through the NEPA process. And even if the EPA rules do not take effect. The roadway is in imminent need of replacement.

As CLL nears capacity in its existing cells, landfill expansion will be a topic of discussion in the next fiscal year budget (FY 20). The excavation of cells will present a particular challenge to the success of the operation. If we can begin to realize the cost of expansion on a more immediate basis, then the future expenditures will be let impactful to the overall budget.

The recycle industry is currently undergoing a crisis on a global level as a result of China's mandates for clean plastic and paper products. We anticipate that the hardship will be felt down to a local level as well. In the meantime it will be important to maintain communications with our partners at Norton Environmental.

Growth is expected to continue in Flagstaff for the near future due to the influx of student housing around the NAU campus. However from the perspective of solid waste disposal, this growth is only reflected in a short-term basis from a construction and demolition standpoint.

The loss in revenue from valuable customers like SCA Tissue ultimately affect the long-term options for the program's business strategy. However, staff will make every effort to continue offering the level of service that the Citizens of Flagstaff and Coconino County have come to expect and we will continue to monitor and adjust to the disposal trends in Flagstaff and the surrounding community.

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