# August

# 2018

# STUDY SESSION

# AND

# BOARD MEETING

for

Yakima Regional Clean

Air Agency

**August 9, 2018**
**Study Session**
**1:30 p.m.**
**Regular Board Meeting**
**2:00 p.m.**

# AGENDA

## Study Session

Discussion concerning options for modifying the Air Quality Management Policy for Dairy Operations

## Regular Meeting

1. **Call to Order**

2. **Roll Call**

3. **Additions or Deletions to the Agenda**

4. **Public Comments**
   If you wish to address the Board you may do so now. Please approach the podium, state your name and the agenda item you wish to address. Please limit your comments to three (3) minutes.

5. **Public Hearing for Revisions to the FY 2019 Budget**
   The Chairman of the Board will open the Public Hearing to accept public testimony on the proposed revisions to the Agency's FY2019 budget. After hearing all public testimony, the Chairman will then close the hearing. A vote will be taken on the proposed FY 2019 Budget revisions during the regular Board meeting.

6. **Approval of Consent Agenda**
   - 6.1 Board Meeting Minutes – June 2018
   - 6.2 Accept YRCAA June & July 2018 Monthly Activity Report

7. **Regular Agenda**
   - 7.1 Executive Director's Report

8. **Action Items**
   - 8.1 Fiscal Vouchers and Payroll Authorization Transfers for June & July 2018
   - 8.2 Revised FY 2019 Budget

8.3 Revisions to YRCAA Administrative Code Part C

**9. Other business**

The August 13th Community Forum has been canceled due to limited staff availability

**10. Adjournment**

# STUDY SESSION

## Discussion Concerning Options for Modifying the Air Quality Management Policy for Dairy Operations

*Yakima Regional Clean Air Agency*
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# EXECUTIVE MEMORANDUM

**DATE OF RELEASE:** August 2, 2018

**DATE OF CONSIDERATION:** August 9, 2018

**TO:** Board of Directors

**FROM:** Office of the Executive Director

**SUBJECT:** Alternative Strategies for the YRCAA Air Quality Policy and Best Management Practices for Dairy Operations

**ISSUE:**
At the April 2018 Board of Directors meeting the Board requested staff research and present alternative strategies that would reduce the agency's exposure to public records request litigation associated with the Air Quality Policy and Best Management Practices for Dairy Operations (Dairy Policy).

**DISCUSSION:**
The vast majority of the litigation risk is attributable to the amount of data contained within a variety of documents required by the agency for the registration program. Public records request for "any and all" records concerning one or many dairies creates an oppressive requirement for this small agency to examine each and every document and any additional documents, such as inspection reports or equipment reports, for lawful redactions.

Clearly any strategy to reduce litigation risk must begin with a reduction in the amount of data, and synonymously the amount of documentation that is submitted to the agency. With this core tenet in mind, over the course of the past four months the agency has examined the following alternative strategies for reducing litigation risk attributed to public record requests concerning dairy operations:

1) Maintain the Dairy Policy in its current form
2) Terminate the Dairy Policy
3) Modify the policy by significantly reducing the amount of supporting documentation required, thus significantly mitigating the litigation risks.
4) Terminate the policy and publish the document as a Resource Guide available to all dairy producers who want to apply the information to their operation
5) A blend of strategies 3 and 4 above

The first strategy clearly does nothing to accomplish the goal of mitigating litigation risk. Simply terminating the policy, while completely mitigating the litigation risk, would significantly hinder the agency in its ability to collect data that is essential to our efforts in developing a complete emissions inventory (EI) of the county. Terminating the program in whole would also delay the agency in taking action on any future enacted federal or state law concerning dairies. Basic information, such as dairy locations and animal numbers, would have to be recollected. The agency would be forced to start at ground zero and reacquire that same basic information before adopting any local rule.

**RECOMMENDATION:**
After numerous internal discussions, staff recommends that the following specific actions be considered for implementation:

1) Rescind the Air Quality Policy and Best Management Practices for Dairy Operations.
2) Direct staff to publish the policy as a resource guide for dairy operators (Proposed Draft Attached)
3) Direct staff to maintain registration of all dairy operations through the use of the attached revised dairy registration form.
4) In November adopt a reduced registration fee of $124 for dairies to cover the work performed in maintaining the scaled down dairy registration program

In addition to eliminating the vast majority of litigation risk, rescinding the Dairy Policy will release the agency from the obligation of mandatory site visits for a program that has been voluntary from its inception. Additionally, rescinding the policy will help alleviate the workload impact created on June 20th when the agency lost its dedicated dairy inspector to another employer.

Publishing a Resource Guide will enable the agency to leverage the knowledge and experience it has gained over the last 6-7 years to better assist dairy operators by providing a “bookshelf” resource that will empower the operator to make sound air pollution reduction/prevention decisions based on their operational processes and budgetary constraints. The agency will continue to provide free technical visits to dairy operators when requested, as we do with all other industries.

Employing the revised registration form will significantly reduce the amount of documents collected while still providing the agency the minimum essential data needed.

Finally, by continuing the dairy registration program on a leaner scale, the agency will be positioned to expeditiously adopt a local rule if future federal or state laws or rules are enacted.

*Keith M. Hurley*
Executive Director

# RESOURCE GUIDE

**and**

# BEST MANAGEMENT PRACTICES

**for**

# DAIRY OPERATIONS

August 2018

YAKIMA REGIONAL CLEAN AIR AGENCY

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## INTRODUCTION

The Yakima Regional Clean Air Agency (YRCAA) began working with local beef cattle feedlots in 1993 to minimize fugitive dust emissions from confined cattle feeding operations. This partnership resulted in the agency publishing the Fugitive Dust Control Guidelines and Best Management Practices for Confined Cattle Feeding Operations policy. In 2001 YRCAA again partnered with heifer replacement feeding operators to publish the Fugitive Dust Control Guidelines and Best Management Practices for Confined Heifer Replacement Feeding Operations policy. In 2010 the agency's Board of Directors instructed staff to develop recommendations for addressing fugitive emissions from dairy operations. On February 10, 2011 the YRCAA Board of Directors approved the Air Quality Management and Best Management Practices for Dairy Operations policy as a pilot research project aimed at gathering information, testing the feasibility of implementing the policy, and measuring the effectiveness of the policy. The YRCAA worked with eight producers at fifteen dairy facilities throughout the county who voluntarily participated in the pilot project. The pilot project work was completed in December 2011. In March of 2012 the Board of Directors approved the policy for a one-year trial implementation period to provide opportunity for more dairies to comply with the policy. The trial implementation work was completed in December 2012. From 2012 through 2018 the agency used the policy to conduct inspections of approximately 41 dairies operating 59 milking facilities throughout the county.

The data collected over the initial six year period of the policy forms the basis for this resource guide. This guide can be used by dairy operators to prevent or reduce fugitive emissions of Ammonia ($NH_3$), Nitrous Oxide ($N_2O$), Hydrogen Sulfide ($H_2S$), Volatile Organic Compounds (VOC), Odor, Particulate Matter (PM), Methane ($CH_4$) and Oxides of Nitrogen ($NO_x$) from the nine dairy operational systems of: Nutrition, Feed Management, Milk Parlor, Housing - Freestall Barns, Housing - Drylot Pens, Grazing Management, Manure Management, Land application of Manure, and "other" systems;

## PURPOSE

**This Resource Guide is intended to:**

- Provide a broad, though not all inclusive, set of demonstrated Best Management Practices (BMPs) that can be applied to reduce/prevent fugitive air emissions from dairy operational systems.
- Provide technical tools and information to aid in the reduction and prevention of air emissions from dairy operations.
- Provide dairy operators options for choosing the best BMPs for their specific operational conditions.
- Enable dairy operators to target/prioritize air emission reductions based on the eight listed air pollutants.
- Be used as a tool to help in reducing/preventing air emissions from the various systems within any dairy operation.
- This guide may be used by any dairy operation, whether located in the state of Washington or in other states.

## SECTION A – POLLUTANT-SPECIFIC BEST MANAGEMENT PRACTICES

The purpose of this section is to present a list of best management practices (BMPs) for reducing emissions from specific air pollutants or pollutant groups. BMPs as they apply to specific dairy operation systems are presented below.

General Principles

- The principle mechanism by which most BMPs operate is to foster conditions which prevent emissions of pollutants addressed by the use of the BMPs; and
- Nothing in this reference guide should be construed to limit the ability of an Operation to be innovative or to use effective management practices that differ from those offered in this guide.

The following is a list of various BMPs for consideration in reducing emissions from each pollutant or pollutant group. The BMPs have not been prioritized for practicality, economic feasibility, ease of use, or efficacy. These are important factors to consider in the successful selection and implementation of BMPs.

### I. Ammonia ($NH_3$)

$NH_3$ is formed when urea in the urine and the urease enzyme found in feces and manure laden soils are combined together. The reaction is very quick and the peak to volatilization is just several hours. Volatilization of $NH_3$ depends primarily on four factors: the protein (N) content in the feed, manure management strategies, the pH of the manure or soil, and the meteorology in general (i.e., temperature and wind speed, etc.). The lifetime of gaseous $NH_3$ is about 24 hours, after which time the $NH_3$ typically deposits near its source. This deposition can lead to eutrophication of surface water, airborne fertilization, and changes in ecosystems.

It is the objective of an $NH_3$ BMP to reduce $NH_3$ emissions and thus, its negative effects. Tradeoffs in $NH_3$ reductions must be carefully considered. Tradeoffs are actions which reduce emissions of one pollutant, but cause an increase in another pollutant emission. Tradeoffs could result due to things such as changes in pH or a shift to aerobic conditions. Therefore, the most effective method of reducing $NH_3$ is to target the source itself. In this case, the source is nitrogen (N) input into the dairy systems. BMPs which reduce $NH_3$ follow.

1. Reduce the amount of dietary protein (N) in the ration to match, rather than exceed, the animal's needs.
2. Practice phase-feeding.
3. Ensure proper ventilation of freestall barns.
4. Bedding selection and management.
5. Treat recycled lagoon water used for flushing.
6. Remove and spread (harrow) manure frequently.
7. Modify alleyway floors.

8. Provide shade for cattle.

9. Locate feed and water opposite in pens.

11. Use straw bedding in drylot pens.

12. Incorporate wood chips in surface layer.

13. Urease inhibitors.

14. Surface moisture content.

15. Stock appropriate number of animals.

16. Use rotational grazing.

17. Move water and feeding areas frequently.

18. Irrigate pastures immediately after grazing.

19. Manure solids separation.

20. Lagoon or storage covers.

21. Surface aeration of lagoons.

22. Reduce the pH of lagoons and manure piles.

23. Apply N fertilizer below no-till residue.

24. Inject or incorporate fertilizer into soil within 24 hours of application.

25. Apply nutrients according to agronomic recommendations based on soil test results.

26. Do not over-irrigate.

27. Utilize cover crops.

28. Apply during cool weather and on still rather than windy days.

## II. Nitrous Oxide ($N_2O$)

Emissions of $N_2O$ result from two different biological processes. There is a very small amount of $N_2O$ produced during nitrification (the biological aerobic process of converting ammonium to nitrate) though this source is relatively insignificant. The primary pathway of $N_2O$ formation is the anaerobic process of denitrification (the conversion of nitrate to $N_2$ or nitrogen gas), in which $N_2O$ is an obligatory intermediate product. Therefore, many of the emission reduction strategies are associated with minimizing these anaerobic conditions. BMPs which reduce $N_2O$ follow.

1. Reduce the amount of dietary protein (N) in the ration to match, rather than exceed, an animal's needs.

2. Urease inhibitors.

3. Surface moisture content.

4. Stock appropriate number of animals.

5. Use rotational grazing.

6. Move water and feeding areas frequently.

7. Apply nutrients according to agronomic recommendations based on soil test results.

8. Do not over-irrigate.

9. Utilize cover crops.

## III. Hydrogen Sulfide ($H_2S$)

$H_2S$ is produced in anaerobic environments from the microbial reduction of sulfate or the decomposition of sulfur-containing organic matter in manure. Most atmospheric $H_2S$ is oxidized to sulfur dioxide ($SO_2$), which is then either dry deposited or oxidized to aerosol sulfate and removed primarily by wet deposition. The residence time of $H_2S$ and its reaction products is of the order of days. BMPs which reduce $H_2S$ follow.

1. Properly manage and minimize overfeeding sulfur in the diet.

2. Bedding selection and management.

3. Surface moisture content management.

4. Manure solids separation.

5. Lagoon or storage covers.

6. Scrub exhaust of enclosed waste containers.

7. Surface aeration of lagoons.

8. Encourage purple sulfur bacterial formation in anaerobic lagoons.

9. Properly manage composted solid manure.

10. Properly manage stockpiled manure.

## IV. Volatile Organic Compounds (VOC)

VOCs vaporize easily at room temperature and include fatty acids, nitrogen heterocycles, sulfides, amines, alcohols, aliphatic aldehydes, ethers, *p*-cresol, mercaptans, hydrocarbons, and halocarbons. The major constituents of dairy VOC emissions that have been identified include organic sulfides, disulfides, $C_4$ to $C_7$ aldehydes, trimethylamine, $C_4$ amines, quinoline, dimethylpyrazine, and $C_3$ to $C_6$ organic acids, along with lesser amounts of aromatic compounds and $C_4$ to $C_7$ alcohols, ketones, and aliphatic hydrocarbons. Fresh manure and fermentation of feedstuffs have been identified as the primary sources of VOC emissions. BMPs which reduce VOC emissions follow.

1. Properly manage ensiled feedstuffs.
2. Store feed in a weatherproof storage structure.
3. Remove spilled and unused feed from feeding area on a regular basis.
4. Remove manure from barns frequently.
5. Modify alleyway floors.
6. Surface moisture content management.
7. Knock down and remove fence line manure.
8. Manure solids separation.
9. Lagoon or storage covers.
10. Surface aeration of lagoons.

## V. Odor

Odor from dairies is not caused by a single species but is rather the result of a large number of contributing compounds including $NH_3$, VOCs, and $H_2S$. Hundreds of compounds contribute to odor from a dairy. A further complication is that odor involves a subjective human response. Although research is under way to relate olfactory response to individual odorous gases, odor measurement using human panels appears to be the method of choice now and for some time to come. Since odor can be caused by hundreds of compounds and is subjective in human response, estimates of odor inventories are not currently possible. BMPs which reduce odor emissions follow.

1. Properly manage and minimize overfeeding sulfur in the diet.
2. Properly manage ensiled feedstuffs.
3. Store feed in a weatherproof storage structure.
4. Remove spilled and unused feed from feeding area on a regular basis.
5. Ensure proper ventilation of freestall barns.

6. Bedding selection and management.

7. Treat recycled lagoon water used for flushing.

8. Remove manure from barns and pens frequently.

9. Modify alleyway floors.

10. Use straw bedding in drylot pens.

11. Incorporate wood chips in surface layer.

12. Surface moisture content management.

## VI. Particulate Matter (PM)

This guide considers particulate matter as $PM_{>10}$, $PM_{10}$ and $PM_{2.5}$. $PM_{>10}$ is commonly defined as airborne particles with aerodynamic equivalent diameters (AEDs) more than 10 µm. $PM_{10}$ is commonly defined as airborne particles with AEDs less than 10 µm. Similarly, $PM_{2.5}$ refers to particles with AEDs less than 2.5 µm. Dairies can contribute directly to primary PM through several mechanisms, including: animal activity; animal housing fans; air entrainment from soil and manure; and indirectly to secondary PM by emissions of $NH_3$, NO, and $H_2S$, which are converted to aerosols through reactions in the atmosphere. Particles produced by gas-to-particle conversion generally are small and fall into the $PM_{2.5}$ size range. Key variables affecting the emissions of $PM_{10}$ include the amount of mechanical and animal activity on the soil-manure surface, the moisture content of the surface, and the fraction of the surface material in the 0-10 µm size range.

The diameter of PM is critical to its health and radiative effects. $PM_{2.5}$ can reach and be deposited in the smallest airways (alveoli) in the lungs, whereas larger particles tend to be deposited in the upper airways of the respiratory tract. Smaller particles are also most effective in attenuating visible radiation, causing regional haze. BMPs which reduce PM emissions are listed below.

1. Store feed in a weatherproof storage structure.

2. Remove spilled and unused feed from feeding area on a regular basis.

3. Do not mix feeds during windy times.

4. Ensure proper ventilation of freestall barns.

5. Provide shade for cattle.
6. Locate feed and water opposite in pens.

7. Remove and spread (harrow) manure frequently.

8. Use straw bedding in drylot pens.

9. Incorporate wood chips in surface layer.

10. Surface moisture content management.

11. Properly manage composted solid manure.

12. Properly manage stockpiled manure.

13. Apply N fertilizer below no-till residue.

14. Utilize cover crops.

15. Apply during cool weather and on still rather than windy days.

16. Installation of windbreaks or shelterbelts.

## VII. Oxides of Nitrogen ($NO_X$)

Nitrification in aerobic soils appears to be the dominant agricultural pathway to Nitric Oxide (NO). Direct emissions of NO from dairy manure are believed to be relatively minor, but a fraction of manure nitrogen applied to soils as fertilizer can be emitted as NO.

The fraction of fertilizer nitrogen released as NO depends on the amount and form of nitrogen (reduced or oxidized) applied to soils, the vegetative cover, temperature, soil moisture, and agricultural practices such as tillage. A small fraction of other reduced nitrogen compounds in animal manure can also be converted to NO by microbial action in soils.

NO and nitrogen dioxide ($NO_2$) are rapidly interconverted in the atmosphere and the sum of all oxidized nitrogen species (except $N_2O$) in the atmosphere is often referred to as $NO_X$. The residence time of $NO_X$ is of the order of days in the lower atmosphere, with the principal removal mechanism involving wet and dry deposition. In terms of environmental effects, $NO_X$ is an important (and often limiting) precursor in tropospheric ozone ($O_3$) production. Furthermore, $NO_3^-$ aerosol is a contributor to PM2.5, and nitrogen deposition in the forms of $HNO_3$, and aerosol $NO_3^-$ can have ecological consequences.

$NO_X$ is also emitted as a result of combustion processes (especially at higher temperature combustion), primarily as NO and $NO_{2.}$ Since nitrification in soils is important to soil health and crop production, no BMPs are presented to reduce $NO_X$ emissions caused by nitrification in soils. Following are BMPs which reduce combustion-caused emissions of $NO_X$.

1. Replace or retrofit older internal combustion engines.

2. Utilize alternatives to outdoor burning.

## VIII. Methane ($CH_4$)

$CH_4$ is produced by microbial degradation of organic matter under anaerobic conditions. The primary source of $CH_4$ from livestock production is enteric fermentation in ruminant animals. Ruminants (sheep, goats, camels, cattle, and buffalo) have unique, four-chambered stomachs. In one chamber, called the rumen, bacteria break down grasses and other feedstuff and generate $CH_4$ as one of several byproducts. The production rate of $CH_4$ is affected by energy intake, which is in turn affected by several factors such as quantity and quality of feed, animal body weight, and age.

$CH_4$ is also emitted during anaerobic microbial decomposition of manure. The most important factor affecting the amount produced is how the manure is managed, because some types of storage and treatment systems promote an oxygen-depleted (anaerobic) environment. Metabolic processes of methanogens lead to $CH_4$ production at all stages of manure handling. Liquid systems tend to encourage anaerobic conditions and produce significant quantities of $CH_4$, while more aerobic solid waste management approaches may produce little or none. Higher temperatures and moist conditions also promote $CH_4$ production.

Methane is destroyed in the atmosphere by reaction with the hydroxyl (•OH) radical. Because of its long residence time (~8.4 years), $CH_4$ becomes distributed globally. Methane is a greenhouse gas and, under certain conditions, contributes to global warming with a potential 23 times that of $CO_2$. Following are BMPs which reduce emissions of $CH_4$.

1. Increase the level of starch in the diet.

2. Surface moisture content management.

3. Manure solids separation.

4. Lagoon or storage covers.

5. Scrub exhaust of enclosed waste containers.

6. Installation of an anaerobic digester.

7. Reduce the pH of lagoons and manure piles.

8. Properly manage composted solid manure.

## SECTION B – SYSTEM-SPECIFIC BEST MANAGEMENT PRACTICES

The purpose of this Appendix is to present a list of BMPs as they apply to reducing emissions from specific dairy systems.

### I. Nutrition

1. Reduce the amount of dietary protein (N) in the ration to match, rather than exceed, the animal's needs.

2. Increase the level of starch in the diet.

3. Properly manage and minimize overfeeding of sulfur in the diet.

4. Practice phase-feeding.

### II. Feed Management

1. Properly manage ensiled feedstuffs.

2. Store feed in a weatherproof storage structure.

3. Remove spilled and unused feed from feeding area on a regular basis.

4. Do not mix feed during windy times.

### III. Milk Parlor

1. Ensure proper ventilation.

2. Use recycled parlor (clean) water used for flushing/cleaning holding areas.

3. Treat recycled water used for flushing/cleaning holding areas.

4. Remove manure from holding areas frequently.

### IV. Housing – Freestall Barns

1. Ensure proper ventilation of freestall barns.

2. Bedding selection and management.

3. Treat recycled lagoon water used for flushing.

4. Remove manure from barns frequently.

5. Modify alleyway floors to separate urine and feces.

## V. Housing – Drylot Pens

1. Provide shade for cattle.
2. Locate feed and water opposite in pens.
3. Remove and spread (harrow) manure frequently.
4. Use straw bedding in drylot pens.
5. Incorporate wood chips in surface layer.
6. Urease inhibitors.
7. Surface moisture content management.
8. Knock down and remove fence line manure.

## VI. Grazing Management

1. Stock appropriate number of animals.
2. Use rotational grazing.
3. Move water and feeding areas frequently.
4. Irrigate immediately after grazing.

## VII. Manure Management

1. Manage solids separation.
2. Lagoon or storage covers.
3. Scrub exhaust of enclosed waste containers.
4. Installation of an anaerobic digester.
5. Surface aeration of lagoons.
6. Reduce the pH of lagoons and manure piles.
7. Encourage purple sulfur bacterial formation in anaerobic lagoons.
8. Properly manage composted solid manure.
9. Properly manage stockpiled manure.

## VIII. Land Application – Manure and/or Chemical Fertilizer

1. Apply N fertilizer below no-till residue.
2. Inject or incorporate fertilizer into soil within 24 hours of application.
3. Apply nutrients according to agronomic recommendations based on soil test results.
4. Do not over-irrigate.
5. Utilize cover crops.
6. Apply during cool weather and on still rather than windy days.
7. Installation of windbreaks or shelterbelts.

# SECTION C - DESCRIPTIONS OF BEST MANAGEMENT PRACTICES (BMPs) FOR AIR EMISSION REDUCTION ON DAIRY OPERATIONS

Produced in collaboration with N. M. Embertson[1] and P. M. Ndegwa[2]

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The purpose of this document is to present brief descriptions of available best management practices (BMPs) for controlling air emissions from dairy operations. The descriptions are presented in a system-specific manner which includes Nutrition, Feed Management, Housing (Freestall Barns), Housing (Drylot Pens), Grazing, Manure Management, and Land Application (Fertilizer and Manure). Not all components or BMPs presented here may apply to your farm. Pollutants impacted by each BMP are presented in parenthesis. These descriptions are not intended to provide detailed information as to how the BMPs should be implemented. It is expected that exact implementation will vary from farm to farm. When applicable, tradeoffs, limitations, or both are listed for each BMP.

***Definitions****: $NH_3$ – ammonia; $N_2O$ – nitrous oxide; $H_2S$ – hydrogen sulfide; $CH_4$ – methane; VOC – volatile organic compounds; PM – particulate matter.*

## I. Nutrition

### *1. Properly Manage Level of Dietary Protein (%CP) in Diet to Match, Rather Than Exceed, an Animal's Needs ($NH_3$, $N_2O$, Odor)*

The most effective and practical way of reducing $NH_3$ emissions is through proper feeding of dietary nitrogen (N). In the diet, the primary source of N is protein. Excess dietary nitrogen is excreted in the urine as urea, which reacts with the fecal enzyme urease and volatilizes as $NH_3$. In general, available research data has demonstrated that properly managed feeding of dietary protein N will result in an $NH_3$ reduction. Studies show that the maximum nitrogen retention efficiency in cows is approximately 50% (1), with the typical efficiency at 38%, so small changes can have a big effect. For example, reducing the protein in the diet from 19 to 14% has shown to reduce urinary urea excretion and subsequent $NH_3$ emission by 33% (2), with no reduction in milk production. The recommended level of CP in the diet is approximately 16%, with considerations made for MUN and herd efficiency factors.

Added advantages of ensuring proper levels of protein in the diet, in addition to reducing $NH_3$ emissions, include:1) reduced operating costs considering protein is the most expensive component of the feeds, 2) healthier animals, and 3) improved nitrogen to phosphorus (N:P) ratio for crops when manure is applied to crop land.

### *2. Increase the Level or Quality of Starch in the Diet ($CH_4$)*

Increasing the level of starch or rapidly fermentable carbohydrates in the diet impacts the rumen pH and microbial population, both of which regulate methane production (3, 4). Since methane emission is the byproduct of incomplete digestion, higher quality diets will allow animals to better digest their feed, be more efficient, and decrease methane production potential. The recommended level of starch in the diet is approximately 23-26%.

### *3. Properly Manage and Minimize Overfeeding Sulfur in the Diet ($H_2S$, Odor)*

A reduction in sulfur intake to maintenance levels will decrease excretion of sulfur compounds and thus, the emission of odorous gases such as hydrogen sulfide ($H_2S$). The recommended level of sulfur in the diet is 0.2-0.4% depending on stage of growth or lactation.

*4. Practice Group and/or Stage of Lactation Feeding ($NH_3$)*

Group feeding is the separation of cattle into groups (i.e., high milk cows, low milk cows, dry cows, heifers, and calves) based on the dietary needs of each group. The goal is to feed only the necessary nutrient levels, such as protein, for growth and/or milk production to each group. Phase-feeding is very effective in reducing $NH_3$ emissions because it matches the protein needs of each group more precisely without over or under feeding a nutrient to the whole herd. Phase feeding is synonymous with precision feeding and is both environmentally responsive and economical.

## II. Feed Management

*1. Properly Manage Ensiled Feedstuffs (VOC, Odor)*

Due to the release of low molecular weight organic compounds during fermentation, silage has been found to be a significant source of volatile organic compounds (VOCs), which are responsible for odor in livestock operations. Properly covering, confining, and reducing the release of VOCs from silage storage can result in significant reduction of VOCs and odor emissions. Covered silage piles need to be properly managed during access to minimize VOCs emissions. The primary method of achieving this is to minimize the surface area of the face and the duration of face exposure where and when feed is accessed, respectively. The access face should be covered immediately after the required amount of silage has been obtained.

*2. Store Feed in a Sheltered Storage Structure (VOC, Odor, PM)*

Since moisture is primary to fermentation and fermentation primary to VOC and odor emission, it is important to minimize the potential for feed becoming wet via rainwater. Weatherproof storage will prevent feed from becoming wet and diminish potential for spoilage and fermentation. Store feed in a covered bunker with proper drainage, or cover exposed feed piles during the wet season. A feed bunker covered on three sides will also reduce PM emission by limiting wind exposure to and erosion of the pile.

*3. Regularly Remove Spilled and Unused Feed from Feeding Area (VOC, Odor, and PM)*

Spilled and unused feed is a source of VOC, odor, and PM emissions. Removal of such feed from the storage and loading areas at least every two weeks, or more frequently during wet periods, will significantly diminish the potential for VOCs, odor, and PM emissions.

*4. Manage or Minimize the Mixing of Feed During Windy Times (PM)*

Mixing, grinding, and chopping of feed during windy times can be a significant source of PM emissions, as well as a waste of feed. Avoiding such activities, or performing them in a sheltered area during wind events, will diminish the potential for PM emission and subsequent transport from the feed processing area.

## III. Milk Parlor

*1. Ensure Proper Ventilation ($NH_3$, Odor, and PM)*

Temperature is a very important factor in the rate of $NH_3$ volatilization. As the ambient temperature increases, $NH_3$ emission increases. Studies show that an increase in ambient housing temperature from 50 to 75º F results in a 46% increase in $NH_3$ emissions (5). Thus, reducing the temperature inside of enclosed parlor and holding areas with proper ventilation and/or cooling reduces the $NH_3$ volatilization potential and reduces animal health effects, which can lower milk production. Odor and PM emissions are likewise reduced by this BMP by circulating air and removing stagnant odor and airborne PM from the enclosed areas.

*2. Use Recycled Parlor (Clean) Water Used for Flushing/Cleaning Parlor ($NH_3$, Odor)*

Using clean water, recycled parlor water, or most dilute water from a multi-stage lagoon system will decrease the reintroduction of odorant materials and reduce emissions. Recycling concentrated liquid manure through the holding area may increase both $NH_3$ and odor emissions and should be avoided.

*3. Treat Recycled Water Used for Flushing/Cleaning Holding Area ($NH_3$, Odor)*

For holding pens and parlors that practice flushing as a means of manure removal, treatment in the form of additives that discourage $NH_3$ hydrolysis (i.e., pH reducers, urease inhibitors, or biological additives) can help reduce ammonia and odor emissions.

*4. Remove Manure from Holding Area Frequently ($NH_3$, VOC, Odor)*

Ammonia volatilization is a function of the mixing time of manure on the stall floor right after it is deposited. The production of $NH_3$ begins immediately and peaks only a few hours after mixing. Odor and VOC production also occurs immediately after manure deposition and continues until removal. Thus, an effective way of reducing emissions from parlors and holding areas is by removing manure at frequent intervals.

Typically, manure removal from parlors and holding areas is performed with a flush system. Studies have shown that a flush system is more effective at reducing $NH_3$ volatilization over a scrape system, and that more frequent manure removal, every 2-4 hours, reduces odor and $NH_3$ (6). Whether using a flush or scrape system, the most effective system is one that removes all manure from the alleyway without leaving piles on the edges or reducing it to a film on the surface. These inefficiencies can lead to an increase in $NH_3$ volatilization via increased mixing and surface exposure. This BMP is also effective in reducing, VOC, and odor emissions.

## IV. Housing – Freestall Barns

*1. Ensure Proper Ventilation of Freestall Barns ($NH_3$, Odor, and PM)*

Temperature is a very important factor in the rate of $NH_3$ volatilization. As the ambient temperature increases, $NH_3$ emission increases. Studies show that an increase in ambient housing temperature from 50 to 75º F results in a 46% increase in $NH_3$ emissions (5). Thus, reducing the temperature inside of freestall barns with proper ventilation and/or cooling of the barns reduces the $NH_3$ volatilization potential and reduces animal heat stress, which can lower milk production. Odor and PM emissions are likewise reduced by this BMP by circulating air and removing stagnant odor and airborne PM from the barn.

*2. Bedding Selection and Management ($NH_3$, $H_2S$, Odor)*

The use of non-absorbent bedding materials may help reduce $NH_3$ and odor emissions when managed well. The most common bedding materials used in dairy barns include: sand, wood shavings, chopped straw, and recycled manure. Among these listed materials, studies have shown, for example, that sand-bedding results in the lowest $NH_3$ emissions when managed correctly (scraped daily, restocked weekly, and completely cleaned out annually). Sand is non-absorbent and allows urine to infiltrate through it, which reduces urine's contact time with ambient air. In contrast, composted manure-bedding does not allow urine to percolate through and, therefore, results in higher ammonia emissions than sand-bedding.

In general, however, proper management of *any* type of bedding including: frequent restocking, daily removal of solid manures, and annual bed change, will significantly reduce the potential of $NH_3$ volatilization from all bedding types. Hydrogen sulfide, which can form under anaerobic bedding conditions, and odor emissions are similarly reduced by this BMP. Most of all, keeping cows from defecating on the bedding material through proper sizing of freestalls has a significant reduction in emission potential by eliminating manure deposition on the beds in the first place.

*3. Treat Recycled Lagoon Water Used for Flushing ($NH_3$, Odor)*

For barns that practice flushing as a means of manure removal from alleyways, treatment in the form of solids removal or use of additives that discourage $NH_3$ hydrolysis (i.e., pH reducers, urease inhibitors, or biological additives) can help reduce ammonia and odor emissions. Using the cleanest or most dilute water from a multi-stage lagoon system will decrease the reintroduction of odorant materials and reduce emissions as well. Recycling concentrated liquid manure through the barn may increase both $NH_3$ and odor emissions and should be avoided.
<u>Tradeoffs/Limitations</u>: Infrastructure and additive cost.

*4. Remove Manure from Barns Frequently ($NH_3$, VOC, Odor)*

Ammonia volatilization is a function of the mixing time of manure on the stall floor right after it is deposited. In addition, the thin-spread manure provides more surface area, which exacerbates the respective emissions. The production of $NH_3$ begins immediately and peaks only a few hours after mixing. Odor and VOC production also occurs immediately after manure deposition and continues until removal. Thus, an effective way of reducing emissions from barns is by removing the manure at frequent intervals (every 2 to 4 hours (6)).

*5. Manure Removal Technology and Efficiency ($NH_3$, VOC, Odor)*

Typically, manure removal is performed with a scrape or vacuum system at milking times when cattle are out of the barn, but can occur more frequently with the use of a flush system or automatic scrapers. Studies have shown that a flush system is more effective at reducing $NH_3$ volatilization over a scrape system, and that more frequent manure removal, every 2 to 4 hours, reduces odor and $NH_3$ (6). However, the most effective system is one that removes all manure from the alleyway without leaving piles on the edges or reducing it to a thin film on the surface. These inefficiencies can actually lead to an increase in $NH_3$ volatilization via increased mixing and surface exposure. This BMP is also effective in reducing, VOC, and odor emissions.

*6. Alleyway Floor Texture and Type ($NH_3$, VOC, Odor)*

In freestalls, most manure is excreted in alleyways where the mixing rate is highest. Minor changes or modifications to the floor surface that reduce the contact time of urine and feces could make a significant difference in $NH_3$ emission. Modification to a 3% sloped floor, over a level (0%) one, encourages transport of urine away from solid manure and could reduce $NH_3$ emission by 21% (7, 8). A double slope with a gutter in the middle to trap the urine could reduce emission by 50% compared to solid floors (7). Grooved concrete floors that allow urine to collect in channels will help in reduction of $NH_3$, since the main objective is to separate the urine from the feces and reduce contact time. Besides reducing emission potential, surface texture or permeable matting will aid in traction and increased hoof health. This BMP is also effective in reducing, VOC and odor emissions.
<u>Tradeoffs/Limitations</u>: Modification with this BMP may not be possible for existing barns. New construction should consider these guidelines.

## V. Housing – Drylot Pens

### *1. Provide Shade for Cattle ($NH_3$, PM)*

Ammonia volatilization is dependent on the mixing of urea and the urease enzyme from urine and feces, respectively. By spreading out the distribution of urine and feces over the pen surface, the mixing potential is reduced. The installation of a shade structure in the center of the pen will aid in distribution of defecation events as the animals follow the shade during the day, dispersing manure and reducing the opportunity for mixing. This also helps to control course PM by more uniform surface wetting and compaction, and aids in reduction of animal heat stress.

### *2. Sitting of Water Trough Within Pen ($NH_3$, PM)*

Placing the water-trough and feed bunk at opposite sides of the pen, or rotating the locations (when applicable), helps to spread feces and urine over a larger area of the pen surface, reducing the opportunity for mixing. This also helps to control coarse PM by more uniform surface wetting and compaction. Conversely, locating the water trough near the feed bunk concentrates surface wetting to a collected area (i.e., feed alley) and limits the movement of animals across a potentially dry pen, thus limiting course PM production.
<u>Tradeoffs/Limitations</u>: This BMP may not be possible for all pen designs.

### *3. Remove and/or Spread (Harrow) Manure Frequently ($NH_3$, PM)*

Ammonia emissions from open drylot pens are due to infrequent manure removal. There are two types of in-pen manure management: (i) spreading or harrowing, and (ii) complete manure removal. In general, manure in drylot pens should be completely cleaned out every one to three months. The reduction in the quantity of manure results in less ammonia volatilization and also minimizes PM (dust) production from animal hoof action on the loose manure pack. More frequent (monthly, weekly) removal of manure from areas where manure deposition is highest (i.e., sleeping areas, feed bunks) is desirable. Installation of concrete alleyways adjacent to feed-bunks aids in daily collection of manure and further reduces ammonia volatilization potential. The daily harrowing of pens should be practiced to spread out the manure pack, but should only be done during times of the day when PM production will not be an issue, such as the early morning.

### *4. Use Straw Bedding in Drylot Pens ($NH_3$, PM, Odor)*

The application of a layer of straw bedding to drylot pens is commonly used as a wintertime management tool to reduce pen wetness and provide animals with a dry layer. However, the addition of straw bedding also aids in the separation of urine and feces to reduce ammonia volatilization, and in reduction of particulate (PM) production from the pen surface. This practice can be utilized year-round for increased ammonia, PM, and odor reductions.

### *5. Incorporate Wood Chips into Surface Layer ($NH_3$, PM, Odor)*

Incorporating woodchips (1/2 inch diameter average) into the pen surface layer will manage moisture content and encourage aeration of the manure pack. The increase in aeration reduces ammonia, odor, and PM. Woodchips should be placed approximately four inches thick in areas where animals tend to congregate and/or deposit manure (i.e., sleeping areas, under shades, near feed-bunks). These areas should also be harrowed daily to encourage aeration and reduce compaction of the surface layer, and restocked with woodchips as needed.

Additionally, if manure is harvested from pens for composting, the addition of woodchips to the pen increases the carbon content of the compost and eliminates the extra step of adding and mixing the woodchips later in the process.

5. *Urease Inhibitors ($NH_3$, $N_2O$)*

Reduction of $NH_3$ from drylot pens can be achieved through enzymatic treatment with urease inhibitors, which inhibit the urease enzyme in feces from reacting with urea and volatilizing as $NH_3$. Several inhibitors are available such as N-(n0butyl) thiophosphoric triamide (NBPT), which is the most effective in preventing the hydrolysis of urea. Urease inhibitors can either be fed to cattle in feed rations or surface applied to the pen surface. Similar to surface acidifiers, urease inhibitor effectiveness is highly variable and can be very costly to achieve significant reductions. This BMP is also relatively effective in reducing $N_2O$ emissions by limiting nitrification. Tradeoffs/Limitations: Can be very expensive to install and maintain effectiveness of surface treatments.

7. *Surface Moisture Content Management ($NH_3$, $N_2O$, VOC, Odor, $CH_4$, $H_2S$, Odor, PM)*

Over-application of water on a dry pen surface activates the hydrolysis and nitrification process, leading to ammonia volatilization and nitrous oxide "bursts", respectively. Water should only be applied to pen surfaces as a dust (PM) mitigation tool and be applied such that it forms a cohesive moist layer on the surface, but does not penetrate too deeply into the surface. The dust (PM) from a dry pen is inversely proportional to the pen surface moisture content. Increasing the pen-surface moisture content binds surface manure and soil particles to limit the production of dust. Too much moisture, however, encourages the production of odorous compounds. A compromise surface moisture level of approximately 28% has been suggested to balance odor and dust (10). Maintaining this moisture level can be accomplished through regular water application, surface bonding additives, use of straw or wood chips to the surface layer, construction of a shade structure, and pen layout and design. This practice requires routine monitoring of surface moisture content.

On the extreme end, standing water should also be avoided. Standing water promotes anaerobic conditions, which are responsible for odor, $CH_4$, $H_2S$, and VOC emissions. Standing water can be mitigated by grading pens to a minimum 3% slope to channel water away from the pen and into a collection area. Contained runoff can then be treated or land applied. Daily harrowing of pens, filling of holes, and center piling will reduce pen conditions that encourage surface-ponding.

8. *Knockdown and Remove Fence Line Manure ($NH_3$, VOC, Odor)*

Over time, manure builds up along fence lines. This build-up of manure along fence lines provides opportunity for anaerobic decomposition (odor) and fly proliferation. Manure should be knocked down and either spread or removed when build-up is greater than 12 inches deep.

## VI. Grazing Management

1. *Stock Appropriate Number of Animals ($NH_3$, $N_2O$)*

Overstocking of cattle increases $NH_3$ volatilization from pastures by increasing the concentration of manure on the field and reducing the amount of plant cover and N uptake. Stocking animals at appropriate rates and intervals for each field will reduce over application of manure and maintain pastures.

2. *Use Rotational Grazing ($NH_3$, $N_2O$)*

Practicing rotational grazing will help maintain pasture forage growth and health, which will maximize plant uptake of manure and reduce the potential of $NH_3$ or $N_2O$ emission. Pastures should be evaluated on a regular basis for plant height and quality, and animals should be removed when plants are less than three inches in height or stem density is less than 85%.

3. *Move Water and Feeding Areas Frequently ($NH_3$, $N_2O$)*

Since the volatilization of $NH_3$ is dependent on the mixing of urine (urea) and feces (urease), dispersing these events evenly over a pasture surface can help reduce $NH_3$ volatilization. Animals on pasture tend to concentrate elimination behaviors around the water trough, feeding, and/or sleeping areas. Studies show that the number of elimination events that occur in a location is highly correlated with the time spent at the location (18). Therefore, distribution of manure deposition can be effected via management and layout of the pasture environment. Moving water-troughs and feed-stations periodically to new locations will disperse cattle activity and thus manure deposition. This will also prevent plant suffocation and trampling in heavily populated areas of the pasture.

4. *Irrigate Immediately after Grazing ($NH_3$)*

Irrigating pastures following grazing will help incorporate manure into the soil and reduce ammonia volatilization potential. Over irrigation can, however, increase $NH_3$ volatilization and $N_2O$ emission.

## VII. Manure Management

1. *Manure Solids Separation ($NH_3$, VOC, Odor, $H_2S$, $CH_4$)*

Solid separation is the removal of the solid portion of the manure waste stream from the liquid portion. The liquid portion is transferred to the storage vessel (i.e., lagoon, tank) and the solid portion is stockpiled, composted, or land applied. Solid separation systems include: screens, rotary drums, centrifugal tanks, earthen pits, weeping walls, settling basins, screw-presses, and others. Approximately 25% of the total manure N is removed with the solids (1); the remaining N stays with the liquid portion of the manure. Solid separation reduces potential of $NH_3$, VOC, Odor, $H_2S$, $CH_4$ emissions from post-separation liquid storages.

2. *Lagoon or Storage Covers ($NH_3$, $H_2S$, VOC, Odor, $CH_4$)*

The emission rate from the surface of a lagoon is influenced by environmental factors such as ambient temperature, relative humidity, surface wind velocity, and precipitation. To control the effects of these factors, addition of a cover to the lagoon is necessary. Lagoon covers range from floating plastics, synthetic or natural peat, straw, polystyrene, and natural dry matter. When properly installed and managed well, any of these covers can reduce $NH_3$ losses by 80-90% (1), in addition to controlling odor, $H_2S$, and $CH_4$ losses. Any cracks in the cover should be taken care of immediately because they will compromise the efficiency of the cover.

The establishment of a natural crust on the lagoon surface, typically formed by the movement and cohesion of solids to the lagoon surface, can reduce ammonia losses by up to 50% (11). The formation of a natural crust will occur when the lagoon has a high solids-content, the ambient air is dry, and there is little precipitation to break the crust. While natural covers can reduce $NH_3$ and $H_2S$ emissions, they need to be monitored for odor, which can emanate from the crust itself.

In general, covers *must* be checked regularly and maintained to prevent leakage and loss of pollutants from the cover. Secondary treatment methods of captured gas either via bio-filters, flaring, scrubbing, or other method should be maintained and operated effectively to minimize emission of untreated pollutants.

Tradeoffs/Limitations: Cost and maintenance time of covers can be high.

3. *Scrub Exhaust of Enclosed Waste Containers ($CH_4$, Odor, H2S)*

Using bio-filters to scrub the exit air from enclosed manure storage facilities can significantly reduce $NH_3$, $H_2S$, odor, and $CH_4$ emissions. Bio-filters vary in style, function, and effectiveness. A technical assistant is necessary to design and implement this BMP effectively.
Tradeoffs/Limitations: This practice requires technical assistance to install and maintain.

4. *Proper Operation and Maintenance of Anaerobic Digester ($CH_4$)*

Anaerobic digestion (AD) converts manure into biogas ($CH_4$ and $CO_2$), which can subsequently be used for providing energy or heating on the dairy or for sale back into the electric grid. The two common types of digesters found on dairy operations are the plug flow type or the complete mixed digesters. The former is more appropriate for operations with scrape manure systems, while the latter is more suitable for dairies with manure flushing systems. The overarching goal of AD is to reduce methane emission from manure. Other gases produced during AD ($H_2S$, $CO_2$) can be scrubbed from the exhaust to provide natural, gas grade $CH_4$. Although AD reduces $CH_4$, $H_2S$, and odor emissions from AD effluent, the digestion process increases the ammonia volatilization potential from the AD effluent. This BMP requires technical assistance and has a high cost associated with installation and operation.
Tradeoffs/Limitations: Increases ammonia volatilization potential from effluent; high cost of installation; and requires technical assistance to install and operate properly.

5. *Surface Aeration of Lagoons (NH3, H2S, VOCs)*

The biodegradable organic materials in manure can be oxidized to stable end products by aerobic bacteria. These microorganisms require oxygen to affect this process. In general, if enough oxygen is provided, the end products of aeration are odor-free. The main problem is the cost of providing adequate oxygen for this process.

To reduce the cost of aeration, surface aeration is suggested as a method for mitigation of odor and other gases from anaerobic lagoons, which are released from incomplete manure decomposition. Surface aeration can complement anaerobic digestion by acting as a biological-blanket, aerobically degrading odorous compounds from the layer of anaerobic decomposition below. The aerobic bacteria in this blanket consume odorous volatile compounds and releases odor-free gases into the air. For example, this layer oxidizes ammoniacal nitrogen ($NH_4^+$, $NH_3$) into nitrate ($NO_3^-$), and oxidizes sulfur containing compounds such as $H_2S$ into elemental sulfur (S) or sulfates ($SO_4^{2-}$). This process thus mitigates emissions of $NH_3$ and $H_2S$ as well other volatile organic odorous compounds that may try to escape from the anaerobic zone below the aerobic blanket.
Tradeoffs/Limitations: High cost associated with running aerators; reduced effectiveness in lagoon with high solids content.

6. *Reduce the pH of Lagoons and Manure Piles ($NH_3$, $CH_4$)*

The pH of stored manure, liquid or solid, greatly affects the rate of $H_2S$ and $NH_3$ volatilization. If the pH of liquid manure stored in a lagoon or tank is maintained above 8 (basic), ammonia volatilization increases and losses may be up to 70% of the total nitrogen entering the lagoon (1). Additionally, in solid manure, the urease enzyme is very active at a pH between 6.8 and 7.6, amplifying the volatilization process from manure piles. At a pH below 6 (acidic), $NH_3$ is bound in solution or tied-up and little $NH_3$ volatilization will occur from liquid or solid manure, respectively. Methane emission is also reduced at a pH below 6.5. On the other hand, low pH in the lagoon may result in elevated $H_2S$ emissions and loss of efficiency of the anaerobic process, which may result in increased odor emissions. Reduction of manure pH in lagoons and manure piles is achieved by addition of acidifying compounds such as alum or acids. However, due to the

natural buffering capacity of manure, large amounts of acidifiers are required to reduce pH and frequent monitoring is necessary.
Tradeoffs/Limitations: Decrease ammonia and methane, but increases hydrogen sulfide and odor production; high cost; and only effective over short-periods.

*7. Purple Sulfur Bacterial Formation in Lagoons ($H_2S$, Odor)*

Purple sulfur bacteria (PSB) are photosynthetic, anaerobic bacteria that grow in the presence of carbon dioxide (carbon source), nitrate (nitrogen source), and hydrogen sulfide (13). Purple sulfur bacteria oxidize the hydrogen sulfide in the lagoon for photosynthesis and produce elemental sulfur or sulfate as a photosynthetic by-product (14), both of which are less odorous than hydrogen sulfide. Since PSB are photosynthetic, the use and/or optimization of a solid separator can aid in light penetration and the proliferation of PSB in a lagoon. The conditions conducive to natural PSB formation are an anaerobic lagoon with low solids content and a pH in the 7.0 to 8.5 range (15). Population of PBS in a lagoon is very difficult to induce and typically happens naturally. Therefore, maintenance of an existing population is the most effective $H_2S$ reduction method for lagoons.
Tradeoffs/Limitations: PSB conditions decrease hydrogen sulfide and odor production, but may increase ammonia volatilization; difficulty in inducing PSB formation.

*8. Properly Manage the Composting of Solid Manure ($H_2S$, Odor, PM, $CH_4$)*

The effectiveness of the composting process is highly dependent on good management of pile characteristics including temperature, moisture, carbon to nitrogen ratio (C:N), and aeration. Low temperature, high moisture, and low aeration will lead to anaerobic conditions inside the manure pile and increase odor, $H_2S$, and $CH_4$ emissions. A shift from anaerobic to aerobic process can cause a nitrification/denitrification cycle that can increase $N_2O$ losses. Low C:N (below 12:1), high temperature, and high aeration of the compost pile will increase $NH_3$ volatilization, which can be up to 90% total N loss under these conditions (12). Low moisture will increase PM emissions. A C:N above 12:1, and optimally around 30:1, will have reduced $NH_3$ emissions, while still supporting an active composting process.

*9. Properly Manage Stockpiled Manure ($H_2S$, Odor, PM)*

Stockpiled manure can easily become anaerobic from compaction, too much moisture, or organic matter breakdown if not managed properly. Anaerobic piles will emit odor, $H_2S$, and $CH_4$. Stockpiles should be stored in a covered area to avoid over saturation with rainwater, or periodically turned to decrease compaction and achieve even moisture levels throughout the pile.

## VIII. Land Application – Manure and/or Chemical Fertilizer

*1. Apply N Fertilizer Below No-Till Residue ($NH_3$, PM)*

The practice of no-till crop harvesting is beneficial in reducing soil erosion from wind (PM) and water transport, and increasing or maintaining soil tilth. The stubble left behind creates a surface cover that helps protect against soil loss. When applying fertilizer the following year to new crops, the fertilizer should be applied under the crop residue, not on top. Appling fertilizer on top of the residue increases exposure to ambient conditions and $NH_3$ volatilization losses.

*2. Inject or Incorporate Fertilizer/Manure into Soil within 24 Hours of Application ($NH_3$, Odor)*

All fertilizer or manure should be injected, incorporated, or applied as close to the ground surface as possible to mitigate $NH_3$ and odor emissions. Nitrogen applied to crop land is susceptible to volatilization if left on the soil and leaf surfaces, or sprayed from some height above the soil surface. Incorporation of manure immediately after application (within 24 hours) via chisel or irrigation (or precipitation event under 0.15 inches) is suggested for annual crop fields and can reduce ammonia losses by up to 98% (1). Application of manure with an aerator, sleighfoot or other below leaf canopy surface applicator (i.e., drop hose irrigation) is recommended for forage fields to reduce $NH_3$ and odor. All of these methods work by moving fertilizer and/or manure into the soil profile away from the surface where volatilization and odor emissions occur. In addition to reducing emission losses, this method conserves more nitrogen in the soil, increasing efficiency and reducing fertilizer costs.

Application of manure using a "big gun" or overhead sprinkler has the highest rate of ammonia loss out of all application methods. The sprinkler exposes more manure surface area to the ambient air, allowing a significant portion of the total nitrogen to be volatilized as $NH_3$ before the liquid manure even reaches the soil surface. Furthermore, sprinkler application also enhances transport and dispersion of emissions especially during windy conditions. Broadcast application, which also exposes manure surface area to the ambient air, also has high $NH_3$ losses (20 to 30% of total N) if not immediately followed by manure-incorporation.

For certain crops, controlled-release fertilizers or fertigation is an effective way to deliver chemical fertilizer to the plants at specific rates and times. This is an effective way to match crop needs and fertilization delivery to reduce the amount of N available for volatilization. These are more costly methods and require installation of necessary irrigation infrastructure. <u>Tradeoffs/Limitations</u>: Deep injection of manure decreases $NH_3$ volatilization, but may increase $N_2O$ emissions via denitrification.

*3. Apply Nutrients According to Agronomic Recommendations Based on Soil and Manure Test Results ($NH_3$, $N_2O$)*

Application of chemical fertilizer and manure nutrients should always be made at agronomic rates to avoid excess application that exacerbates N losses. Agronomic application is the application of nutrients to meet crop needs. Agronomic application rate is determined by knowing the nutrient content of the soil (soil test), the nutrient content of the manure (manure test), and the crop nutrient needs at the time of application (estimated or historical value). By matching crop needs to available nutrients, over application of nitrogen and subsequent $NH_3$ and $N_2O$ emission can be avoided. A nutrient planner can help determine agronomic rate and plan annual applications to match crop needs.

*4. Do Not Over-irrigate ($NH_3$, $N_2O$)*

Irrigation increases soil water content and may increase $N_2O$ emissions when over applied by promoting anaerobic conditions and increasing denitrification. When combined with nitrogen from fertilizer or manure application, the rates of emissions are increased. Irrigation to very dry soil can also increase $N_2O$ and/or $NH_3$ emission by microbial action. Irrigate at recommended levels and timing throughout the growing season.

*6. Utilize Cover Crops ($NH_3$, $N_2O$, PM)*

Cover crops reduce the amount of surface exposed and provide root structures to hold soil in place. The use of cover crops, instead of leaving fields bare/fallow, decreases wind erosion (PM) and losses of $NH_3$ and $N_2O$ by providing surface cover and nutrient uptake, respectively. Cover crops also reduce nitrate leaching during the wet season by taking up soil nitrate.

*6. Apply During Cool Weather and on Still Rather than Windy Days ($NH_3$, Odor, PM)*

Temperature, humidity, wind speed, and precipitation all influence the rate of $NH_3$, PM, and odor losses. Ammonia loss increases exponentially with rising temperatures, and increases with greater wind speeds. PM losses also increase with increasing temperatures which dry out the soil, and increased wind speed that moves soil and manure particles from the surface into the ambient air. Therefore, the application of manure during cool, still weather will decrease the amount of PM and $NH_3$ volatilized from the manure (16). Appling in the early morning or late evening will not only reduce $NH_3$ volatilization, but will also reduce the transport of PM and odor to surrounding neighbors. Light precipitation (less than 0.15 inches) following application can also decrease $NH_3$ volatilization by binding $NH_3$ in the aqueous phase and moving it into the soil profile.

## IX. Other

*1. Installation of Windbreaks or Shelterbelts ($NH_3$, Odor, PM)*

Windbreaks or shelterbelts could be either natural (e.g., a line of trees) or artificial (e.g., a solid brick or hay bale wall). Windbreaks mitigate emissions through multiple pathways. One, windbreaks break or slow the wind and thus reduces the transport of emitted gases, particulates, and odor from the dairy. A windbreak, composed of trees or a physical barrier, will partially reduce wind speeds for a distance of roughly 30 times its height (17). Two, windbreaks promote mixing and dispersion of emitted gases and odor, which dilute the respective emissions, with respect to the receiver. Three, windbreaks intercept particulates and odor, which subsequently break down as in the case of odorous compounds, or is deposited on site as in the case of particulates. The effectiveness of a windbreak, therefore, depends on its placement, height, spacing or porosity, and prevailing direction of wind and its fluctuations. Windbreak structures ranging even in modest heights ranging from 20 to 30 feet can provide significant mitigation of odor and particulate problems (19). These structures can be installed on individual systems (barns, lagoons, compost or manure piles, etc) in the dairy or on the entire dairy.

Other indirect benefits that accrue from installation of windbreaks, especially of the natural kind include: (i) alleviation of complaints which are sometimes influenced by visual images of the dairy, and (ii) enhanced landscape aesthetics of the dairy.

*2. Vehicle Road Condition Management (PM)*

Vehicle traffic on on-farm dirt roads can be a significant source of course particulate matter. Feed trucks, manure tankers, maintenance vehicles, etc. are constantly moving around the facility. Watering roads or applying a surface binder can significantly reduce the incidence of PM production from on-farm vehicle traffic. This should be conducted during dry times of the year and during high traffic times.

*3. Engine Selection and Efficiency (NOx)*

Engines used on-site for power generation should be energy efficient and properly maintained to minimize the production of NOx from combustion processes.

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## SECTION D: DAIRY BMPs QUICK REFERENCE TABLE

| BMP # (NOTE) | Best Management Practice | Ammonia ($NH_3$) | Nitrous Oxide ($N_2O$) | Hydrogen Sulfide ($H_2S$) | Volatile Organic Compounds (VOCs) | Odor | Particulate Matter (PM) | Methane ($CH_4$) | Oxides of Nitrogen ($NO_X$) |
|---|---|---|---|---|---|---|---|---|---|
| **I. Nutrition** | | | | | | | | | |
| **I.1** | Properly manage level of dietary protein (%CP) in diet to match, rather than exceed animal's needs. | | | | | | | | |
| **I.2** | Increase the level or quality of starch in the diet. | | | | | | | | |
| **I.3** | Properly manage and minimize overfeeding of sulfur in the diet. | | | | | | | | |
| **I.4** | Practice group and/or stage of lactation feeding. | | | | | | | | |
| **II. Feed Management** | | | | | | | | | |
| **II.1** | Properly manage ensiled feedstuffs. | | | | | | | | |
| **II.2** | Store feed in a sheltered area or storage structure. | | | | | | | | |
| **II.3** | Regularly re-pile or remove spilled and unused feed from feeding area. | | | | | | | | |
| **II.4** | Manage or minimize feed mixing during windy times. | | | | | | | | |
| **III. Milking Parlor** | | | | | | | | | |
| **III. 1** | Ensure proper ventilation. | | | | | | | | |
| **III. 2/3** | Use recycled (clean) or treated water for flushing parlor. | | | | | | | | |
| **III. 2/3** | Use recycled (clean) or treated water for cleaning holding pen. | | | | | | | | |
| **III. 4** | Remove manure from barns frequently. | | | | | | | | |
| **IV. Housing - Freestall Barns** | | | | | | | | | |
| **IV. 1** | Ensure proper ventilation. | | | | | | | | |
| **IV. 2** | Bedding selection and management. | | | | | | | | |
| **IV. 3** | Treat recycled lagoon water used for flushing. | | | | | | | | |
| **IV. 4** | Remove manure from barns frequently. | | | | | | | | |
| **IV. 5** | Manure removal technology and efficiency. | | | | | | | | |
| **IV. 6** | Alleyway floor texture and type. | | | | | | | | |

## SECTION D: DAIRY BMPs QUICK REFERENCE TABLE

| BMP # (NOTE) | Best Management Practice | Ammonia ($NH_3$) | Nitrous Oxide ($N_2O$) | Hydrogen Sulfide ($H_2S$) | Volatile Organic Compounds (VOCs) | Odor | Particulate Matter (PM) | Methane ($CH_4$) | Oxides of Nitrogen ($NO_X$) |
|---|---|---|---|---|---|---|---|---|---|
| **V. Housing - Drylot Pens** | | | | | | | | | |
| **V. 1** | Provide shade for cattle. | | | | | | | | |
| **V. 2** | Sitting of water trough within pen. | | | | | | | | |
| **V. 3(a)** | Remove manure frequently. | | | | | | | | |
| **V. 3(b)** | Spread (harrow) manure frequently. | | | | | | | | |
| **V. 4** | Use straw bedding in pen (seasonal). | | | | | | | | |
| **V. 5** | Incorporate wood chips in surface layer. | | | | | | | | |
| **V. 6** | Use urease inhibitors. | | | | | | | | |
| **V. 7** | Surface moisture content management. | | | | | | | | |
| **V. 8** | Knock down and remove fence line manure. | | | | | | | | |
| **VI. Grazing Management** | | | | | | | | | |
| **VI.1** | Stock appropriate number of animals. | | | | | | | | |
| **VI.2** | Use rotational grazing. | | | | | | | | |
| **VI.3** | Move water and feeding areas frequently. | | | | | | | | |
| **VI.4** | Irrigate immediately after grazing. | | | | | | | | |
| **VII. Manure Management** | | | | | | | | | |
| **VII. 1** | Manure solids - mechanical separation. | | | | | | | | |
| **VII. 1** | Manure solids - settling basin. | | | | | | | | |
| **VII. 2** | Lagoon or storage covers (natural or composite). | | | | | | | | |
| **VII. 3** | Scrub exhaust of enclosed waste containers. | | | | | | | | |
| **VII. 4** | Proper maintenance of installed methane digester. | | | | | | | | |
| **VII. 5** | Surface aeration of lagoons. | | | | | | | | |
| **VII. 6** | Reduce the pH of lagoons and manure piles below 6. | | | | | | | | |
| **VII. 7** | Purple sulfur bacterial formation in anaerobic lagoons. | | | | | | | | |
| **VII. 8** | Properly manage the composting of manure. | | | | | | | | |

## SECTION D: DAIRY BMPs QUICK REFERENCE TABLE

| BMP # (NOTE) | Best Management Practice | Ammonia ($NH_3$) | Nitrous Oxide ($N_2O$) | Hydrogen Sulfide ($H_2S$) | Volatile Organic Compounds (VOCs) | Odor | Particulate Matter (PM) | Methane ($CH_4$) | Oxides of Nitrogen ($NO_X$) |
|---|---|---|---|---|---|---|---|---|---|
| **VII. 9** | Properly manage stockpiled manure. | | | | | | | | |
| **VIII. Land Application - Manure or Chemical Fertilizer** | | | | | | | | | |
| **VIII. 1** | Apply N fertilizer below no-till residue. | | | | | | | | |
| **VIII. 2(a)** | Corn - Inject fertilizer/manure into soil at application. | | | | | | | | |
| **VIII. 2(b)** | Forage - Manure/fertilizer application method and/or incorporation practice. | | | | | | | | |
| **VIII. 3** | Apply nutrients according to agronomic recommendations based on soil and manure test results. | | | | | | | | |
| **VIII. 4** | Do not over-irrigate. | | | | | | | | |
| **VIII. 5** | Utilize cover crops in winter crop rotation. | | | | | | | | |
| **VIII. 6** | Apply during cool weather on still rather than windy days. | | | | | | | | |
| **IX. Other** | | | | | | | | | |
| **IX. 1** | Installation of windbreaks or shelterbelts. | | | | | | | | |
| **IX. 2** | Vehicle road condition management. | | | | | | | | |
| **IX. 3** | Engine selection and efficiency. | | | | | | | | |

**Note:** The BMP numbers correspond to the BMP numbers in Appendix D

**This table provides a graphical depiction of which pollutants can be mitigated by implementing each BMP, within each system.**
**Used in conjunction with Appendix D, it provides a quick reference for selecting BMPs which target specific pollutants, specific systems, or both.**

## SECTION E - AIR QUALITY BMP SELECTION MATRIX

The matrix presented here provides a tool for selecting best management practices (BMPs) for air quality emission reduction. For detailed descriptions of respective BMPs, refer to the sister-document entitled "Descriptions of Best Management Practices (BMP)". This current document is neither intended to provide detailed information as to how the BMPs should be selected (or implemented), nor is it the only feasible approach on selection (or implementation) of BMPs. It is expected that exact selection or implementation will vary from farm to farm. When applicable, be mindful of tradeoffs, limitations, or both for each BMP.

***Definitions***: *$NH_3$ = ammonia; $N_2O$ = nitrous oxide; $H_2S$ = hydrogen sulfide; $CH_4$ = methane; VOC = volatile organic compounds; PM = particulate matter.*

The following matrix outlines the process for identifying sources of emissions on your facility and how to choose and implement BMPs to mitigate those emissions. Use this chart and the detailed example that follows it as guides when developing your Air Quality Management Plan.

**I. List the sources of emissions on the dairy.**

**II. For each source, list the expected pollutants in order of importance**
(Example: VOCs for silage storage area; PM for dry open feedlots; etc.).

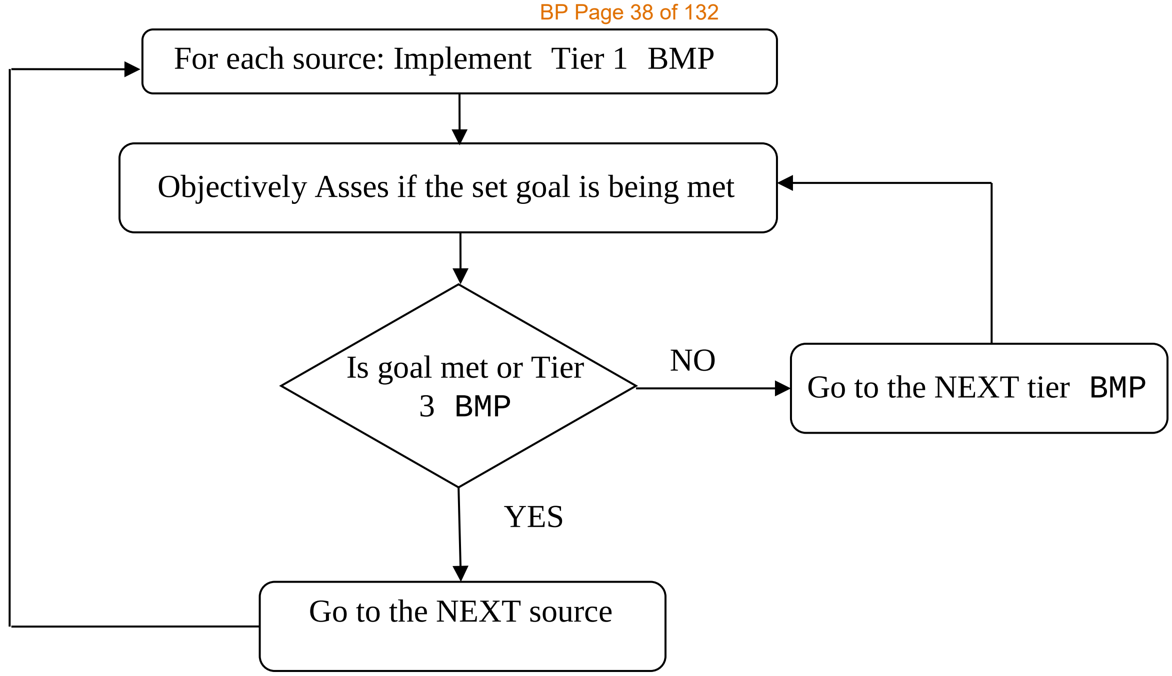
**III. List the sources in order of importance with respect to expected or projected emission level**
(Example: Open anaerobic lagoons because of their size and open nature, are likely be to more important with respect to air emissions than sand-settling basins; broadcast (big gun) land application is likely to have greater impact on air quality than injection; etc.).

**IV. Define the emissions mitigation goal for each of the sources.**
The goal for individual sources, for example, could be:

1. To address existing regulations – either local, State, or federal
2. To minimize nuisance lawsuits
3. To champion environmental stewardship
4. To address the most important pollutant in terms of volume or health impact
5. To address other goals

**V. Depending on the goal for each source, list three BMPs to address the goal based on a three-tier-system** with respect to effectiveness, cost, ease of implementation, compatibility with other BMPs, and in compatibility with your nutrient management plans.

1. Tier 1 being the least expensive and easy to implement
2. Tier 3 being the most advanced and most expensive to implement




**List the sources of emission on the dairy.** The following sources are the most common areas of air pollutant emission on a dairy operation. Not all areas may apply to your farm. Select the sources that do apply and list the specific factors (i.e., production areas) within that source that can contribute to air pollutant emission (e.g., Manure Storage may have manure holding pit, lagoon, and compost pile as areas within the source that can contribute emissions).

1. Nutrition
2. Feed Management
3. Milk Parlor
4. Housing - Freestall Barns
5. Housing - Drylot Pens
6. Grazing Management
7. Manure Management
8. Land Application
9. Other

**For each source, list the expected pollutants in order of importance.** For each source, the pollutants of concern have been listed below in general order of importance. Your farm may have a different order. When in doubt, use the order listed below.

1. Nutrition: $NH_3$, $CH_4$, $H_2S$, $N_2O$.
2. Feed Management: VOC, PM, Odor.
3. Milk Parlor: $NH_3$, VOC, Odor, $H_2S$.
4. Housing - Freestall Barns: $NH_3$, VOC, Odor, $CH_4$, $H_2S$.
5. Housing - Drylot Pens: $NH_3$, PM, Odor, $H_2S$, $CH_4$, VOC, $N_2O$.
6. Grazing Management: $NH_3$, $N_2O$.
7. Manure Management – Liquid: $NH_3$, $H_2S$, $CH_4$, Odor, VOC; Solid: $NH_3$, $H_2S$, PM, $CH_4$.
8. Land Application: $NH_3$, PM, Odor, $N_2O$.
9. Other

**List the sources in order of importance with respect to expected or projected emission level.** For each pollutant of concern, the primary sources that emit that pollutant have been listed below in order of importance. Your farm may have a different order; when in doubt, use the order listed below. For each source, identify and list the specific factors that are contributing to that pollutant (these should have been listed in **I.** above).

1. Ammonia ($NH_3$)
    a. Nutrition
    b. Housing - Freestall Barns
    c. Housing - Drylot Pens
    d. Milk Parlor
    e. Land Application
    f. Manure Management
    g. Grazing Management
    h. Feed Management
2. Methane ($CH_4$)
    a. Manure Management
    b. Nutrition
3. Hydrogen Sulfide ($H_2S$)
    a. Manure Management
    b. Housing - Drylot Pens
    c. Nutrition
4. Volatile Organic Compounds (VOC)
    a. Feed Management
    b. Housing - Freestall Barns
    c. Housing - Drylot Pens
    d. Milk Parlor
    e. Manure Management
5. Particulate Matter (PM)
    a. Housing - Drylot Pens
    b. Land Application
    c. Feed Processing
    d. Manure Management
6. Nitrous Oxide ($N_2O$)
    a. Nutrition
    b. Housing - Drylot Pens
    c. Land Application
    d. Grazing Management
7. Odor
    a. Land Application

b. Manure Management
c. Housing - Drylot Pens
d. Housing - Freestall Barns
e. Milk Parlor
f. Feed Management
g. Nutrition

**Define the emissions mitigation goal for each of the sources.** Emission mitigation goals are going to be specific to your farm, objectives, and source emissions. List goals for each source.

The goal for individual sources, for example, could be:

- To address existing regulations – either local or federal
- To minimize nuisance lawsuits
- To champion environmental stewardship
- To address the most important pollutant in terms of volume or health impact
- To address other goals

**Depending on the goal for each source, list three BMPs to address the goal based on a three-tier-system with respect to effectiveness, cost, ease of implementation, compatibility with other BMPs, and in compatibility with your nutrient management plans. Tier 1 being the least expensive and easiest to implement. Tier 3 being the most advanced and most expensive to implement.** Tier 1, 2, and 3 level BMPs have been listed for each source on a dairy farm. This list correlates to the BMPs listed in the "Descriptions of Best Management Practices (BMP)" document. This list is not exhaustive and tier level BMPs may vary for your individual farm. Refer to Table 1 (at the end of this Appendix) for a selection matrix guide for choosing tier level BMPs for each source.

1. Nutrition
   a. *Tier 1* - Properly Manage Level of Dietary Protein (%CP) in Diet to Match, Rather Than Exceed, an Animal's Needs ($NH_3$, $N_2O$, Odor); Properly Manage and Minimize Overfeeding Sulfur in the Diet ($H_2S$, Odor).
   b. *Tier 2* - Practice Group and/or Stage of Lactation Feeding ($NH_3$).
   c. *Tier 3* - Increase the Level or Quality of Starch in the Diet ($CH_4$); Utilize feed additives to maximize efficiency ($NH_3$, $H_2S$, $CH_4$).

2. Feed Management
   a. *Tier 1* - Regularly Remove Spilled and Unused Feed from Feeding Area (VOC, Odor, and PM); Manage or Minimize the Mixing of Feed During Windy Times (PM).
   b. *Tier 2* - Properly Cover and Manage Ensiled Feedstuffs (VOC, Odor).
   c. *Tier 3* - Store Feed in a Sheltered Storage Structure (VOC, Odor, PM).

3. Milk Parlor
   a. *Tier 1* - Use Recycled Parlor (Clean) Water Used for Flushing/Cleaning Parlor and Holding Area ($NH_3$, Odor); Ensure Proper Ventilation ($NH_3$, Odor, and PM).
   b. *Tier 2* - Remove Manure from Parlor and Holding Area Frequently ($NH_3$, VOC, Odor).
   c. *Tier 3* - Treat Recycled Water Used for Flushing/Cleaning Holding Area ($NH_3$, Odor);

4. Housing - Freestall Barns
    a. *Tier 1* - Remove Manure from Barns Frequently ($NH_3$, VOC, Odor); Ensure Proper Ventilation of Freestall Barns ($NH_3$, Odor, and PM).
    b. *Tier 2* - Bedding Selection and Management ($NH_3$, $H_2S$, Odor); Manure Removal Technology and Efficiency ($NH_3$, VOC, Odor).
    c. *Tier 3* - Treat Recycled Lagoon Water Used for Flushing ($NH_3$, Odor); Alleyway Floor Texture and Type ($NH_3$, VOC, Odor); Manure Removal Technology and Efficiency ($NH_3$, VOC, Odor).

5. Housing - Drylot Pens
    a. *Tier 1* - Spread (Harrow) Manure Frequently ($NH_3$, PM); Surface Moisture Content Management ($NH_3$, $N_2O$, VOC, Odor, $CH_4$, $H_2S$, Odor, PM).
    b. *Tier 2* - Remove Manure Frequently ($NH_3$, PM); Incorporate Wood Chips in Surface Layer ($NH_3$, PM, Odor); Use Straw Bedding in Drylot Pens ($NH_3$, PM, Odor); Knockdown and Remove Fence Line Manure (VOC, Odor).
    c. *Tier 3* - Urease Inhibitors ($NH_3$, $N_2O$); Provide Shade for Cattle ($NH_3$, PM); Siting of Water Trough within Pen ($NH_3$, PM).

6. Grazing Management
    a. *Tier 1* - Stock Appropriate Number of Animals ($NH_3$, $N_2O$); Use Rotational Grazing ($NH_3$, $N_2O$).
    b. *Tier 2* - Move Water and Feeding Areas Frequently ($NH_3$, $N_2O$).
    c. *Tier 3* - Irrigate Immediately after Grazing ($NH_3$).

7. Manure Management
    a. *Tier 1* - Manure Solids Separation ($NH_3$, VOC, Odor, $H_2S$, $CH_4$); Properly Manage the Composting of Solid Manure ($H_2S$, Odor, PM, $CH_4$); Properly Manage Stockpiled Manure ($H_2S$, Odor, PM).
    b. *Tier 2* - Lagoon or Storage Covers ($NH_3$, $H_2S$, VOC, Odor, $CH_4$); Scrub Exhaust of Enclosed Waste Containers ($CH_4$, Odor, H2S).
    c. *Tier 3* - Installation and Proper Operation of an Anaerobic Digester ($CH_4$); Surface Aeration of Lagoons (NH3, H2S, VOCs); Reduce the pH of Lagoons and Manure Piles ($NH_3$, $CH_4$); Encourage Purple Sulfur Bacterial Formation in Anaerobic Lagoons ($H_2S$, Odor).

8. Land Application – Manure and/or Chemical Fertilizer
    a. *Tier 1* - Apply Nutrients According to Agronomic Recommendations Based on Soil and Manure Test Results ($NH_3$, $N_2O$); Inject or Incorporate Fertilizer into Soil within 24 Hours of Application ($NH_3$, Odor); Do Not Over-irrigate ($NH_3$, $N_2O$); Apply During Cool Weather and on Still Rather than Windy Days ($NH_3$, Odor, PM).
    b. *Tier 2* - Utilize Cover Crops ($NH_3$, $N_2O$, PM); Apply N Fertilizer below No-Till Residue ($NH_3$, PM).
    c. *Tier 3* - Installation of Windbreaks or Shelterbelts (Odor, PM).

9. Other
   a. *Tier 1* - Installation of Windbreaks or Shelterbelts ($NH_3$, Odor, PM).
   b. *Tier 2* - Vehicle Road Condition and Management (PM).
   c. *Tier 3* - Engine Selection and Efficiency (NOx).

# APPENDIX A: BMP Selection Matrix

**Table 1.** BMP selection matrix based on source and tier level mitigation

| Sources of emission on a dairy | Expected pollutants for each source in order of importance | Suggested BMPs for emissions reduction Tier 1 | Suggested BMPs for emissions reduction Tier 2 | Suggested BMPs for emissions reduction Tier 3 |
|---|---|---|---|---|
| Nutrition | $NH_3$, $CH_4$, $H_2S$, $N_2O$ | Properly Manage Level of Dietary Protein (%CP) in Diet to Match, Rather Than Exceed, an Animal's Needs ($NH_3$, $N_2O$, Odor)<br>Properly Manage and Minimize Overfeeding Sulfur in the Diet ($H_2S$, Odor) | Practice Group and/or Stage of Lactation Feeding ($NH_3$) | Increase the Level or Quality of Starch in the Diet ($CH_4$)<br>Utilize feed additives to maximize efficiency ($NH_3$, $H_2S$, $CH_4$) |
| Feed Management | VOC, PM, Odor | Regularly remove Spilled and Unused Feed from Feeding Area (VOC, Odor, PM)<br>Manage or Minimize the Mixing of Feed During Windy Times (PM) | Properly Cover and Manage Ensiled Feedstuffs (VOC, Odor) | Store Feed in a Sheltered Storage Structure (VOC, Odor, PM) |
| Milk Parlor | $NH_3$, VOC, Odor, $H_2S$ | Use Recycled Parlor (Clean) Water Used for Flushing/Cleaning Parlor and Holding Area ($NH_3$, Odor);<br>Ensure Proper Ventilation ($NH_3$, Odor, and PM) | Remove Manure from Parlor and Holding Area Frequently ($NH_3$, VOC, Odor) | Treat Recycled Water Used for Flushing/Cleaning Holding Area ($NH_3$, Odor) |
| Housing – Freestall Barns | $NH_3$, VOC, Odor, $CH_4$, $H_2S$ | Remove Manure from Barns Frequently ($NH_3$, VOC, Odor);<br>Ensure Proper Ventilation of Freestall barns ($NH_3$, Odor, and PM) | Bedding Selection and Management ($NH_3$, $H_2S$, Odor)<br>Manure Removal Technology and Efficiency ($NH_3$, VOC, Odor) | Treat Recycled Lagoon Water Used for Flushing ($NH_3$, Odor)<br>Alleyway Floor Texture and Type ($NH_3$, VOC, Odor)<br>Manure Removal Technology and Efficiency ($NH_3$, VOC, Odor) |
| Housing – Drylot Pens | $NH_3$, PM, Odor, $H_2S$, $CH_4$, VOC, $N_2O$ | Spread (Harrow) Manure Frequently ($NH_3$, PM)<br>Surface Moisture Content Management ($NH_3$, $N_2O$, VOC, Odor, $CH_4$, $H_2S$, Odor, PM) | Remove Manure Frequently ($NH_3$, PM)<br>Incorporate Wood Chips in Surface Layer ($NH_3$, PM, Odor)<br>Use Straw Bedding in Drylot Pens ($NH_3$, PM, Odor)<br>Knockdown and Remove Fence Line Manure (VOC, Odor) | Urease Inhibitors ($NH_3$, $N_2O$)<br>Provide Shade for Cattle ($NH_3$, PM)<br>Sitting of Water Trough within Pen ($NH_3$, PM) |

# APPENDIX A: BMP Selection Matrix

| Sources of emission on a dairy | Expected pollutants for each source in order of importance | Suggested BMPs for emissions reduction Tier 1 | Suggested BMPs for emissions reduction Tier 2 | Suggested BMPs for emissions reduction Tier 3 |
|---|---|---|---|---|
| Grazing Management | $NH_3$, $N_2O$ | Stock Appropriate Number of Animals ($NH_3$, $N_2O$)<br>Use Rotational Grazing ($NH_3$, $N_2O$) | Move Water and Feeding Areas Frequently ($NH_3$, $N_2O$) | Irrigate Immediately after Grazing ($NH_3$) |
| Manure Storage | Liquid: $NH_3$, $H_2S$, $CH_4$, Odor, VOC<br>Solid: $NH_3$, $H_2S$, PM, $CH_4$ | Manure Solids Separation ($NH_3$, VOC, Odor, $H_2S$, $CH_4$)<br>Properly Manage the Composting of Solid Manure ($H_2S$, Odor, PM, $CH_4$)<br>Properly Manage Stockpiled Manure ($H_2S$, Odor, PM) | Lagoon or Storage Covers ($NH_3$, $H_2S$, VOC, Odor, $CH_4$)<br>Scrub Exhaust of Enclosed Waste Containers ($CH_4$, Odor, H2S) | Installation of an Anaerobic Digester ($CH_4$)<br>Surface Aeration of Lagoons (NH3, H2S, VOC)<br>Reduce the pH of Manure ($NH_3$, $CH_4$)<br>Encourage Purple Sulfur Bacterial Formation in Lagoons ($H_2S$, Odor) |
| Land Application | $NH_3$, PM, Odor, $N_2O$ | Apply Nutrients According to Agronomic Recommendations Based on Soil and Manure Test Results ($NH_3$, $N_2O$)<br>Inject or Incorporate Fertilizer into Soil within 24 Hours of Application ($NH_3$, Odor)<br>Do Not Over-irrigate ($NH_3$, $N_2O$)<br>Apply During Cool Weather and on Still Rather than Windy Days ($NH_3$, Odor, PM) | Utilize Cover Crops ($NH_3$, $N_2O$, PM)<br>Apply N Fertilizer below No-Till Residue ($NH_3$, PM) | Installation of Windbreaks or Shelterbelts (Odor, PM) |

**Facility:** 0 **Date:** 0 **(Version 8; 10/28/11)**

# AQ BMP SCORE SHEET

**Description of Score Sheet** - Scores entered in the gray boxes range from 0 to 5 for each pollutant (5 being optimum implementation). Scores for each BMP are based on the visual evaluation and/or documention of practices assessed during inspections. For descriptions of BMPs listed, refer to the document "Descriptions of Best Management Practices (BMPs)" (YRCAA, 2011).

**How to use this table** - 1) Review your overall score. A score above 80% is good, between 70-80% is adequate, and below 70% is poor and should be evaluated for improvements. 2) Review the score (%) for each category (i.e., Nutrition, Housing, etc.) and each pollutant (i.e., Ammonia, Nitrous Oxide, etc.). The values listed in the "*Category Level of BMP Implementation (%)*" row gives the relative effectiveness of the BMPs for that specific category as implemented at your facility at the time of inspection. A value below 70% should be evaluated and you should consider making improvements in that category. 3) Look at the individual score given to each BMP. Use these to identify the areas where improvements can be made.

| | | | Good | | Adequate | Poor - Needs improvement | |
|---|---|---|---|---|---|---|---|
| **Overall Score (%) & Grade:** | **#DIV/0!** | **#DIV/0!** | 100-90% | 90-80% | 80-70% | 70-60% | <60% |
| | | | **A** | **B** | **C** | **D** | **E** |

| BMP # | Best Management Practice | Ammonia ($NH_3$) | Nitrous Oxide ($N_2O$) | Hydrogen Sulfide ($H_2S$) | Volatile Organic Compounds (VOCs) | Odor | Particulate Matter (PM) | Methane (CH4) | Oxides of Nitrogen (NOX) |
|---|---|---|---|---|---|---|---|---|---|
| | **I. Nutrition** | | | | | | | | |
| I. 1 | Properly manage level of dietary protein (~16%CP) | 0 | 0 | | | 0 | | | |
| I. 2 | Increased level or quality of starch in diet (23-26%) | | | | 0 | | | 0 | |
| I. 3 | Manage and minimize overfeeding of sulfur-containing feed | | | 0 | | 0 | | | |
| I. 4 | Practice group and/or stage of lactation feeding | 0 | 0 | 0 | | 0 | | 0 | |
| | *Category Level of BMP Implementation (%)* | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***NA*** | ***#DIV/0!*** | ***NA*** |
| | **II. Feed Management** | | | | | | | | |
| II. 1 | Properly manage ensiled feedstuffs | 0 | | | 0 | 0 | 0 | | |
| II. 2 | Store feed in a sheltered storage structure | | | | 0 | 0 | 0 | | |
| II. 3 | Regularly remove spilled and unused feed from feeding area | 0 | | | 0 | 0 | 0 | | |
| II. 4 | Manage or minimize feed mixing during windy times | | | | | | 0 | | |
| | *Category Level of BMP Implementation (%)* | ***#DIV/0!*** | ***NA*** | ***NA*** | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***NA*** | ***NA*** |
| | **III. Milk Parlor** | | | | | | | | |
| III. 1 | Ensure proper ventilation | 0 | | | | | | | |
| III. 2/3 | Use recycled (clean) or treated water for flushing parlor | 0 | | 0 | 0 | 0 | | | |
| III. 2/3 | Use recycled (clean) or treated water for cleaning holding pen | 0 | | 0 | 0 | 0 | | | |
| III. 4 | Remove manure from holding area frequently | 0 | | | 0 | 0 | | | |
| | *Category Level of BMP Implementation (%)* | ***#DIV/0!*** | ***NA*** | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***NA*** | ***NA*** | ***NA*** |
| | **IV. Housing - Freestall Barns** | | | | | | | | |
| IV. 1 | Ensure proper ventilation | 0 | | | | | | | |
| IV. 2 | Bedding selection and management | 0 | | | | 0 | 0 | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| IV. 3 | Treat recycled lagoon water used for flushing | 0 | | 0 | 0 | 0 | | | |
| IV. 4 | Remove manure from barns frequently | 0 | | | 0 | 0 | | | |
| IV. 5 | Manure removal technology and efficiency | 0 | | 0 | 0 | 0 | | | |
| IV. 6 | Alleyway floor texture and type | 0 | | | | 0 | | | |
| | *Category Level of BMP Implementation (%)* | ***#DIV/0!*** | ***NA*** | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***NA*** | ***NA*** |
| | **V. Housing - Drylot Pens** | | | | | | | | |
| V. 1 | Provide shade for cattle | 0 | | | | 0 | 0 | | |
| V. 2 | Sitting of water trough within pen | 0 | | 0 | | 0 | 0 | | |
| V. 3 (a) | Remove manure frequently | 0 | | | 0 | 0 | 0 | 0 | |
| V. 3 (b) | Spread (harrow) manure frequently | 0 | | | 0 | 0 | 0 | 0 | |
| V. 4 | Use straw bedding in pen (seasonal) | 0 | | | | 0 | 0 | 0 | |
| V. 5 | Incorporate wood chips into surface layer | 0 | | | | 0 | 0 | 0 | |
| V. 6 | Utilize urease inhibitors | 0 | 0 | | | 0 | | | |
| V. 7 | Surface moisture content management | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| V. 8 | Knock down and remove fence line manure | 0 | | 0 | | 0 | | | |
| | *Category Level of BMP Implementation (%)* | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***NA*** |
| | **VI. Grazing Management** | | | | | | | | |
| VI. 1 | Stock appropriate number of animals | 0 | 0 | | | 0 | 0 | | |
| VI. 2 | Use rotational grazing | 0 | 0 | | | 0 | | | |
| VI. 3 | Move water and feeding areas frequently | 0 | 0 | | | 0 | | | |
| VI. 4 | Irrigate immediately after grazing | 0 | 0 | | 0 | 0 | | | |
| | *Category Level of BMP Implementation (%)* | ***#DIV/0!*** | ***#DIV/0!*** | ***NA*** | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***NA*** | ***NA*** |
| | **VII. Manure Management** | | | | | | | | |
| VII. 1 | Manure solids - mechanical separation | 0 | | 0 | | 0 | | | |
| VII. 1 | Manure solids - settling basin | 0 | | 0 | | 0 | | 0 | |
| VII. 2 | Lagoon or storage covers (natural or composite) | 0 | | 0 | 0 | 0 | | 0 | |
| VII. 3 | Scrub exhaust of enclosed waste containers | 0 | | 0 | 0 | 0 | | 0 | |
| VII. 4 | Proper maintenance of installed methane digester | | | | 0 | 0 | | 0 | |
| VII. 5 | Surface aeration of lagoons | 0 | | 0 | 0 | 0 | | | |
| VII. 6 | Reduce the pH of lagoons and manure piles below 6 | 0 | | 0 | | 0 | | | |
| VII. 7 | Purple sulfur bacterial formation in lagoons | 0 | | 0 | | 0 | | | |
| VII. 8 | Properly manage the composting of manure | | | 0 | | 0 | 0 | | |
| VII. 9 | Properly manage stockpiled manure | | | 0 | | 0 | 0 | 0 | |
| | *Category Level of BMP Implementation (%)* | ***#DIV/0!*** | ***NA*** | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***NA*** |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **VIII. Land Application - Manure or Chemical Fertilizer** | | | | | | | | | |
| VIII. 1 | Apply N fertilizer below no-till residue | 0 | 0 | 0 | | 0 | 0 | | |
| VIII. 2(a) | Corn - Inject fertilizer/manure into soil at application | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| VIII. 2(b) | Forage - Manure/fertilizer application method and/or incorporation practice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| VIII. 3 | Apply nutrients according to agronomic recommendations based on soil and manure test results | 0 | 0 | | | 0 | | | |
| VIII. 4 | Do not over-irrigate | 0 | 0 | | | | | | |
| VIII. 5 | Utilize cover crops in winter crop rotation | 0 | 0 | | | | 0 | | |
| VIII. 6 | Apply during cool weather and on still rather than windy days | 0 | | 0 | 0 | 0 | 0 | | |
| | *Category Level of BMP Implementation (%)* | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***#DIV/0!*** | ***NA*** |
| **IX. Other** | | | | | | | | | |
| IX. 1 | Installation of windbreaks or shelterbelts | 0 | | 0 | | 0 | 0 | | |
| IX. 2 | Vehicle road condition management | | | | | | 0 | | |
| IX. 3 | Engine selection and efficiency | | | | | | | | 0 |
| | *Category Level of BMP Implementation (%)* | ***#DIV/0!*** | ***NA*** | ***#DIV/0!*** | ***NA*** | ***#DIV/0!*** | ***#DIV/0!*** | ***NA*** | ***#DIV/0!*** |
| | **Overall Level of BMP Effectivity by Pollutant (%)** | - | - | - | - | - | - | - | - |

# Dairy Operations Registration

*NOTE:* Enter information from your ***previous calendar year activities*** and mail it back or email it to registration@yrcaa.org

Licensed Dairy Name ______________________________________________

Operation Location ______________________________________________

Mailing Address ______________________________________________

Owner/ Operations Manager ________________________________________

Phone ______________________ Email ______________________________

Preferred Contact Method: Mail ☐ Email ☐

1. Provide the annual averages of animal numbers, the actual maximum number of cattle which can be confined annually and the average weight of each category below.

| | Annual Average | Max Capacity | Average Weight (lbs) |
|---|---|---|---|
| Milking | ______ | ______ | ______ |
| Dry | ______ | ______ | ______ |
| Heifer | ______ | ______ | ______ |
| Calf | ______ | ______ | ______ |
| Total | ______ | ______ | ______ |

2. Certification

I the undersigned do hereby certify that the foregoing is to the best of my knowledge, after reasonable inquiry, true and accurate.

| ______________________ | ______________________ | __________ |
|---|---|---|
| Print Name & Title of Responsible Official | Signature | Date |

# CONSENT AGENDA ITEMS

**SUMMARYOF THE GOVERNING**
**BOARD OF DIRECTORS**
**STUDY SESSION MEETING**

**June 14, 2018**

**Location and Time:**
**Yakima City Hall Council Chambers** **1:30 pm**

---

## *STUDY SESSION*

*Called to Order at 1:30 pm by Chairman Jon DeVaney*

**Topic: Updates and Public Comments to the Proposed FY 2019 Budget**

Mr. Hurley stated that no public comments were received.

Mr. Hurley pointed out corrections that were made to the proposed budget.

Appendices: page 37
- Appendix D listing was corrected to FY 2019 YRCAA Resource Allocation Summary
- Appendix E listing was corrected to FY 2019 YRCAA Supplemental Income Assessments

Resolutions: pages 35 and 36
- Resolution 2018 -05 reference to Appendix E was corrected to FY 2019 YRCAA Supplemental Income Assessments, 35
- Resolution 2018-06 reference to Appendix D was corrected to FY 2019 YRCAA Resource Allocation Summary, page 36

There were no questions from the Board members.

*Study Session was adjourned at 1:33 pm.*

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**SUMMARYOF THE GOVERNING**
**BOARD OF DIRECTORS**
**REGULAR BOARD MEETING**

**June 14, 2018**

**Location and Time:**
**Yakima City Hall Council Chambers** **2:00 pm**

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## *REGULAR MEETING*

1. **Chairman DeVaney** *called the meeting to order at 2:00 p.m.*

2. **Mary Wurtz, Clerk of the Board**, *conducted roll call. There was a quorum.*
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

| PRESENT WERE: | |
|---|---|
| **BOARD MEMBERS:**<br>Steven Jones, Ph.D., County Representative<br>Carmen Mendez, Large City Representative<br>Jon DeVaney, Member at Large<br>Ron Anderson, County Commissioners<br><br>**ABSENT:**<br>Norm Childress, Small City Representative | **LEGAL COUNSEL:**<br>Gary Cuillier<br><br>**STAFF:**<br>Keith Hurley, Executive Director<br>Mary Wurtz, Clerk of the Board |

**3. Additions or Deletions to the Agenda**

None

**4. Public Comment** *30:52*

Jean Mendoza approached the podium and began the presentation she was scheduled to present. Mr. DeVaney informed her that time was set aside for her presentation toward the end of the board meeting. She questioned if the public is allowed to make comments during the Public Comment period. Mr. DeVaney said yes but it should be only on items on the Agenda. If the public wants to present something that is not on the agenda they need to let the Board know ahead of the meeting so that time may be set aside for them.

Sandy Braeden, Friends of Toppenish Creek (FOTC), questioned if the Board has reinstituted the policy of allowing the public to comment on a topic that is not on the agenda. Mr. DeVaney replied the Board requests you confine your comments to items on the Agenda; if your topic is unrelated to agenda items please schedule time for your presentation. Ms. Braeden feels that the Board meetings are not open public meetings since the public can talk only on something on the agenda.

Ms. Mendez (City Council Member) remarked that typically the open comment period during their meetings (City of Yakima Council Meetings) are for any subject the public wishes to talk about. Mr. DeVaney stated the Board members typically request if an item is not on the Agenda to please request to have the subject placed on the next Board meeting Agenda.

**5. Public Hearing on Proposed FY 2019 Budget** *36:*

**Chair DeVaney** opened the hearing at 2:08

**Chair DeVaney** asked if there was public testimony or comments on the proposed FY 2019 Budget and received none.

**Chair DeVaney** closed the hearing at 2:09

**6. Consider approving the Consent Agenda items 5.1 and 5.2** *39:00*

5.1 Approve Study Session and Board Meeting Minutes – May 2018

5.2 Accept YRCAA May 2018 Monthly Activity Report

**Ms. Mendez** moved to accept the Consent Agenda Items. **Mr. Anderson** seconded. Motion approved with no dissension.

**7. Regular Agenda** *39:45*

Mr. Hurley reviewed the graphs regarding the PM 2.5 data for Yakima and Sunnyside.

Yakima Regional Clean Air Agency is waiting to receive a formal award letter from the Department of Ecology Woodstove Change-Out Grant.

Mr. Jones asked for Mr. Hurley to refresh the Board on why the Public Comment policy came about. Mr. Hurley stated that, as a result of direction from the Board, he researched the subject with help from the MRSC. He discovered that there is no law granting the public the right to a public comment period. He also found the Board is allowed to set reasonable rules for conduct of any public comment period. He also stated that these rules were adopted as a result of prior instances where public comments grew contentious and continued on for an exceptionally long period of time. There has been no change to the current public comment rules.

Ms. Mendez questioned what type of public comment would someone make about the agenda? Mr. DeVaney interjected today's agenda covers general operations of the agency so general questions about the operations would be pertinent. We have had requests to present, during the public comment periods, scientific reports that will take longer than the three minute period or that the board has not had a chance to review so we ask them to schedule these to be placed on the agenda for further discussion.

Ms. Mendez commented that it is a bit odd that people are allowed to speak only on agenda items. She felt that we should set time aside for a person to speak on a topic that has just been presented.

**8. Action Items** *46:52*

8.1 Fiscal Vouchers and Payroll Authorization Transfers for May 2018

**Mr. Anderson** motioned to approve **Mr. Jones** seconded
Motion approved with no dissension

8.2 Proposed FY 2019 Budget

Approval by minute action of:

Resolution 2018-04 Approving FY 2019 Employee Salaries and Employer Contributions to Employee Health Insurance

Resolution 2018-05 Approving Calendar Year 2019 Proportional Shares of Supplemental Income Assessment

Resolution 2018-06 Adopting the Agency Fiscal Year (FY) 2019 Budget

**Mr. Anderson** motioned to approve the budget and all resolutions as a total **Mr. Jones** seconded

Motion approved with no dissension

8.3 Iron Horse Business Park Lease

Mr. Hurley mentioned the revised proposal we received from our current landlord. The business that occupies the other half of the building has given their notice to vacate, as such the landlord wishes to lease or sale the building as a whole. Neither option is beneficial to the Agency. We would be able to sign a five-year lease but if a buyer or renter came along that wants the entire building, we would be given six months to move.

**Mr. Anderson** motioned to approve **Mr. Jones** seconded
Motion approved with no dissension

**8. Other Business** *59:40*

Mr. DeVaney announced there is no Board meeting in July; the next Board meeting will be August 9, 2018.

Jean Mendoza, FOTC, presented information on the hazards of spraying manure through irrigation systems. Ms. Mendoza gave highlights from the State of Wisconsin's "Considerations for the Use of Manure Irrigation Practices" document. The study covered the effects of bacterial infections, caused by spraying manure, that affect the gastrointestinal track. She requests the Board study the information given and if a workgroup is put together at the state level she hopes that Yakima Regional Clean Air Agency would be involved and that the people of the Yakima Valley would be included also.

**9. Adjournment** *1:*

**Mr. Anderson** motioned to adjourn the meeting **Mr. Jones** seconded**.**
Motion approved with no dissension

**Meeting was adjourned at 2:17 p.m.**

______________________________
Jon DeVaney, Board Chairman

______________________________
Mary Wurtz, Clerk of the Board

A**udio CD of this meeting is available at YRCAA**
*Meeting Summary submitted to Board for approval*

**Date of Release:** July 5, 2018
**Date of Consideration:** August 9, 2018
**To:** Board of Directors
**From:** Office of the Executive Director
**Subject:** Monthly Activity Report

| Activity | FY17 | Apr.18 | May. 18 | June 18 | FY17 thru June | FY18 thru June |
|---|---|---|---|---|---|---|
| Minor Source Inspections | 155 | 0 | 4 | 28 | 155 | 97 |
| Complaints Received | 250 | 14 | 13 | 7 | 250 | 166 |
| NOVs Issued | 100 | 16 | 7 | 5 | 100 | 74 |
| AODs Issued | 16 | 0 | 0 | 1 | 16 | 4 |
| Warning Notices Issued | 16 | 0 | 0 | 0 | 16 | 2 |
| NOPs Issued | 57 | 2 | 5 | 4 | 57 | 33 |
| SEPA Reviews | 198 | 17 | 29 | 38 | 198 | 275 |
| AOP Applications Received | 1 | 0 | 0 | 0 | 1 | 0 |
| AOPs Issued or Renewed | 4 | 0 | 0 | 0 | 4 | 0 |
| Deviations/Upsets Reported | 12 | 1 | 1 | 1 | 12 | 12 |
| AOP Inspections | 5 | 2 | 0 | 0 | 5 | 4 |
| Public Workshops | 0 | 0 | 0 | 0 | 0 | 1 |
| Media Events | 0 | 0 | 0 | 0 | 0 | 0 |
| Media Contacts | 11 | 1 | 2 | 0 | 11 | 19 |
| Education Outreach Events | 8 | 1 | 0 | 0 | 8 | 9 |
| Sources Registered | 365 | 0 | 7 | 3 | 365 | 343 |
| NSR Applications Received | 24 | 1 | 5 | 1 | 24 | 19 |
| NSR Approvals Issued-Temporary | 0 | 0 | 0 | 0 | 0 | 0 |
| NSR Approvals Issued-Permanent | 24 | 0 | 0 | 0 | 24 | 8 |
| NODRs Received | 221 | 20 | 32 | 24 | 221 | 236 |
| Agricultural Burn Permits Issued | 184 | 15 | 12 | 5 | 184 | 174 |
| Conditional Use Permits Issued | 5 | 1 | 1 | 0 | 5 | 8 |
| Residential Burn Permits Issued | 1264 | | 50 | 57 | 1264 | 917 |
| Burn Ban Days | 63 | 0 | 0 | 0 | 63 | 66 |
| Public Records Requests Fulfilled | 51 | 6 | 2 | 1 | 51 | 26 |

**Acronyms:**

**AOP -** Air Operating Permit; **NODR -** Notification of Demolition and Renovation; **NOP -** Notice of Penalty; **NOV -** Notice of Violation; **NSR -** New Source Review; **SEPA -** State Environmental Policy Act

*AGENDA ITEM 6.2*

**Date of Release:** August 2, 2018
**Date of Consideration:** August 9, 2018
**To:** Board of Directors
**From:** Office of the Executive Director
**Subject:** Monthly Activity Report

| Activity | FY18 | May18 | Jun18 | Jul18 | FY18 thru July | FY19 thru July |
|---|---|---|---|---|---|---|
| Minor Source Inspections | 93 | 4 | 28 | 26 | 9 | 58 |
| Complaints Received | 153 | 13 | 7 | 4 | 12 | 24 |
| NOVs Issued | 67 | 7 | 5 | 0 | 2 | 12 |
| AODs Issued | 4 | 0 | 1 | 0 | 1 | 1 |
| Warning Notices Issued | 2 | 0 | 0 | 0 | 1 | 0 |
| NOPs Issued | 28 | 5 | 4 | 1 | 3 | 10 |
| SEPA Reviews | 246 | 29 | 38 | 13 | 14 | 80 |
| AOP Applications Received | 0 | 0 | 0 | 0 | 0 | 0 |
| AOPs Issued or Renewed | 0 | 0 | 0 | 0 | 0 | 0 |
| Deviations/Upsets Reported | 11 | 1 | 1 | 1 | 1 | 3 |
| AOP Inspections | 4 | 0 | 0 | 1 | 1 | 1 |
| Public Workshops | 1 | 0 | 0 | 0 | 0 | 0 |
| Media Events | 0 | 0 | 0 | 0 | 0 | 0 |
| Media Contacts | 17 | 2 | 0 | 4 | 1 | 6 |
| Education Outreach Events | 9 | 0 | 0 | 1 | 3 | 1 |
| Sources Registered | 331 | 7 | 3 | 0 | 0 | 10 |
| NSR Applications Received | 14 | 5 | 1 | 0 | 0 | 6 |
| NSR Approvals Issued-Temporary | 0 | 0 | 0 | 0 | 0 | 0 |
| NSR Approvals Issued-Permanent | 8 | 0 | 0 | 0 | 2 | 0 |
| NODRs Received | 204 | 32 | 24 | 14 | 26 | 70 |
| Agricultural Burn Permits Issued | 162 | 12 | 5 | 7 | 2 | 24 |
| Conditional Use Permits Issued | 7 | 1 | 0 | 0 | 0 | 1 |
| Residential Burn Permits Issued | 467 | 50 | 57 | 2 | 40 | 109 |
| Burn Ban Days | 66 | 0 | 0 | 0 | 0 | 0 |
| Public Records Requests Fulfilled | 24 | 2 | 1 | 2 | 2 | 5 |

**Acronyms:**

**AOP** - Air Operating Permit; **NODR** - Notification of Demolition and Renovation; **NOP** - Notice of Penalty; **NOV** - Notice of Violation; **NSR** - New Source Review; **SEPA** - State Environmental Policy Act

*AGENDA ITEM 6.2*

# REGULAR

# AGENDA

# ITEMS

# Executive Memorandum

**Date of Release:** August 2, 2018

**Date of Consideration:** August 9, 2018

**To:** The YRCAA Board of Directors

**From:** Office of the Executive Director

**Subject:** Executive Director's Report

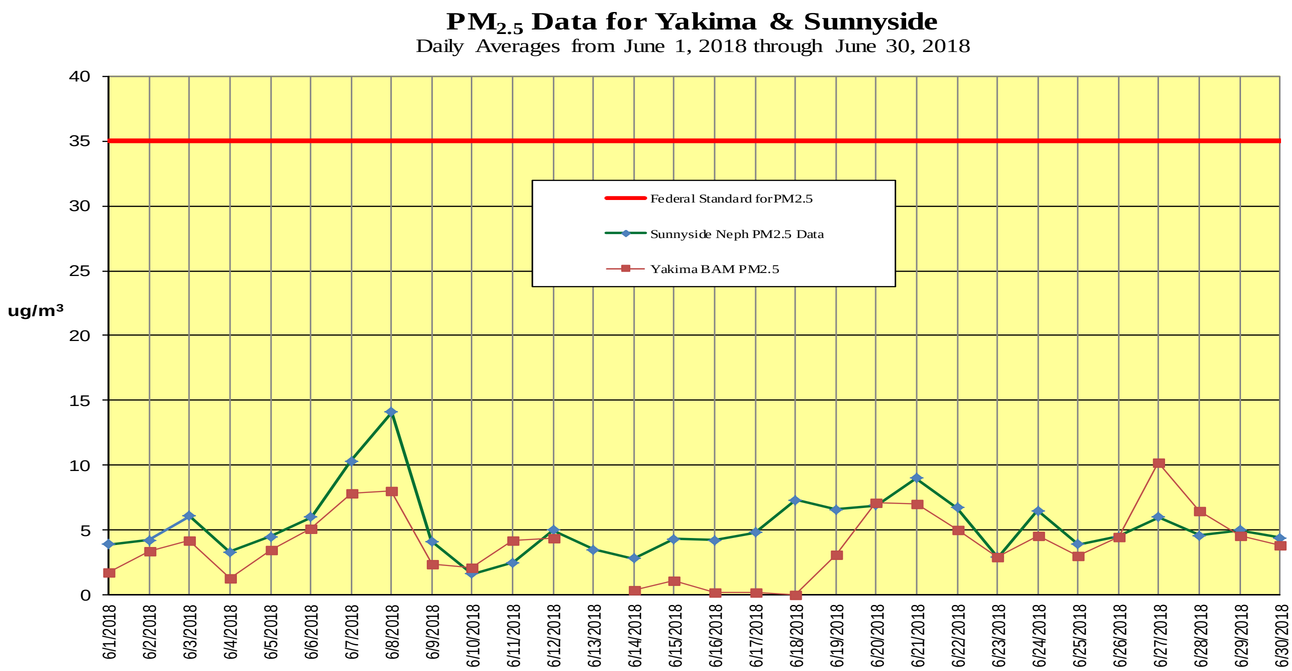
Keith M. Hurley

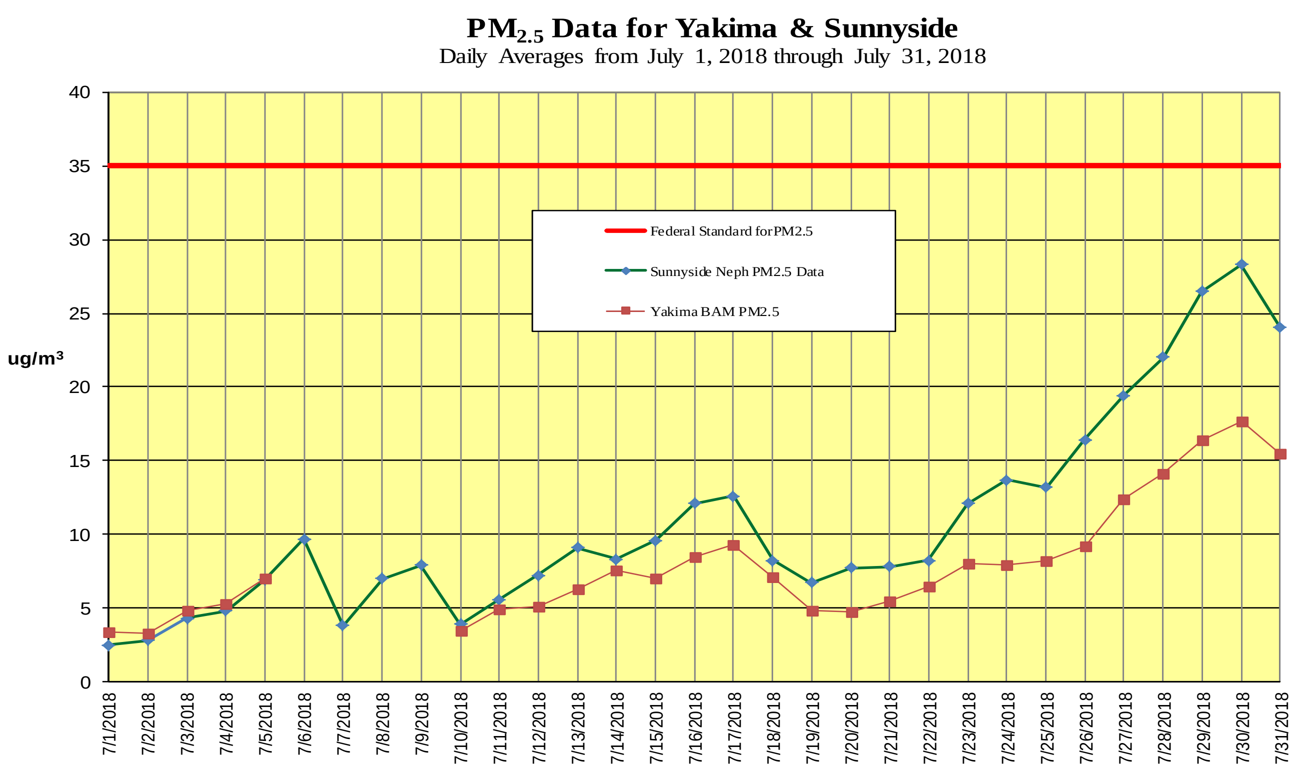
## 1. Compliance & Engineering

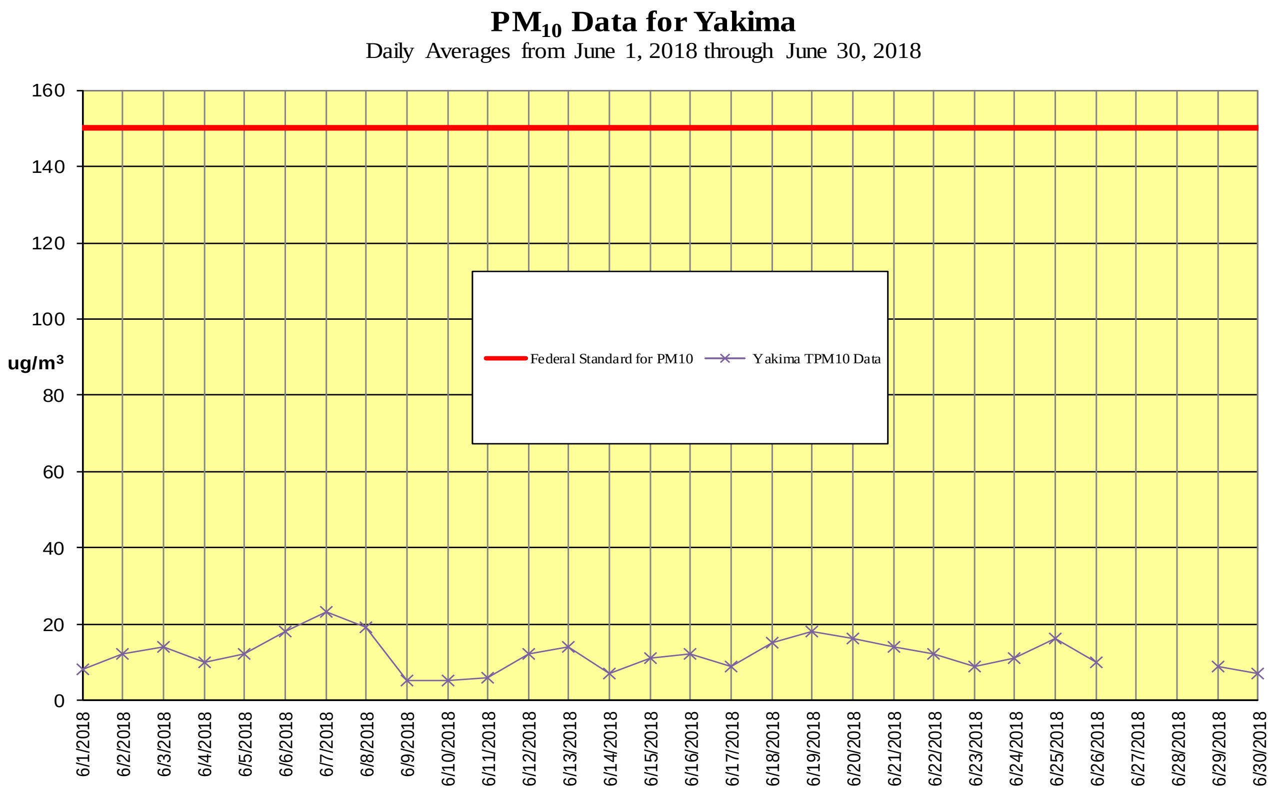
The following table itemizes, by type, the complaints received and the number of NOVs issued for the months of June and July 2018:

| Type of Complaint | # of Complaints | # of NOVs | # of AODs |
|---|---|---|---|
| Residential Burning | 4 | 2 | 1 |
| Agricultural Burning | 1 | 1 | 0 |
| Other Burning | 0 | 0 | 0 |
| Fugitive Dust | 3 | 2 | 0 |
| Agricultural Dust | 2 | 0 | 0 |
| Agricultural Odor | 0 | 0 | 0 |
| Surface Coating | 0 | 0 | 0 |
| Odor | 0 | 0 | 0 |
| Asbestos | 1 | 0 | 0 |
| Others | 0 | 0 | 0 |
| **TOTALS** | **11** | **5** | **1** |

Air Monitoring Data:




PM10 Data for Yakima
Daily Averages from June 1, 2018 through June 30, 2018
ug/m³
160
140
120
100
80
60
40
20
0
Federal Standard for PM10
Yakima TPM10 Data
6/1/2018
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6/3/2018
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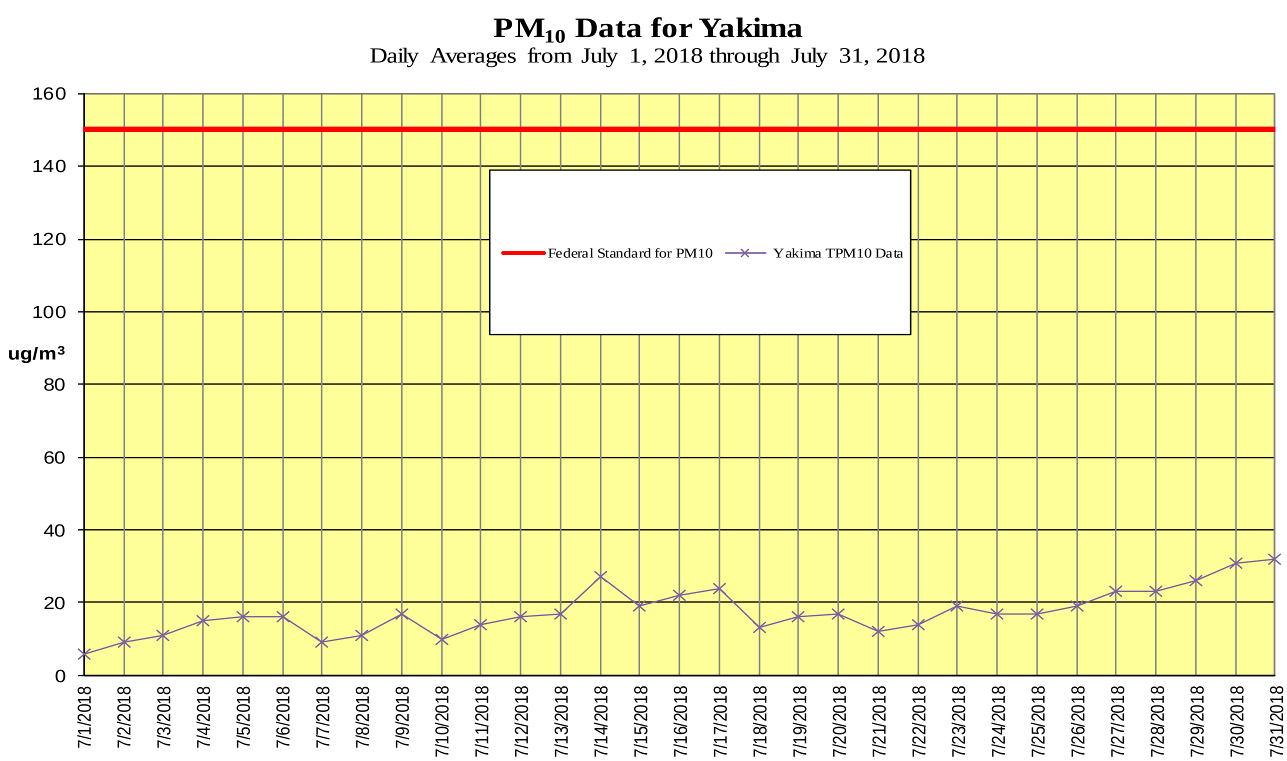
PM10 Data for Yakima
Daily Averages from July 1, 2018 through July 31, 2018
ug/m³
160
140
120
100
80
60
40
20
0
Federal Standard for PM10
Yakima TPM10 Data
7/1/2018
7/2/2018
7/3/2018
7/4/2018
7/5/2018
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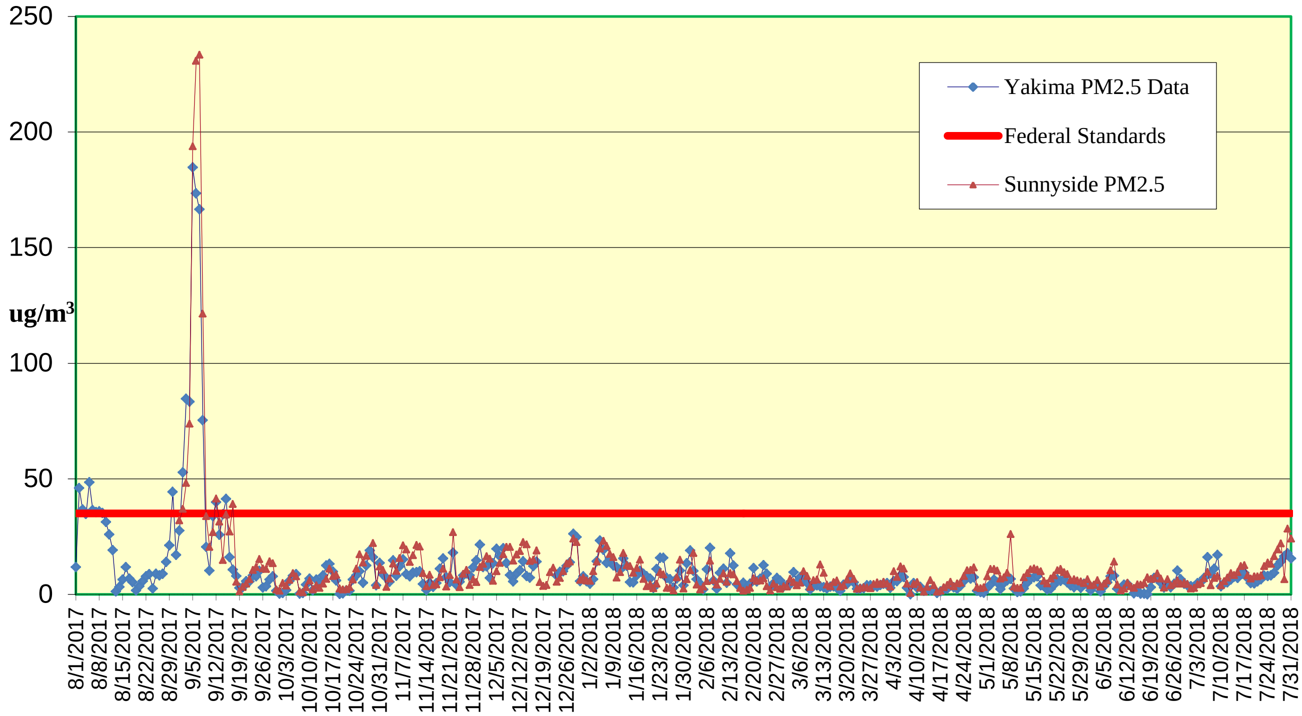
7/31/2018

**Annual $PM_{2.5}$ Data for Yakima & Sunnyside**

Daily Averages from August 1, 2017 through July 31, 2018




**2. Woodstove Change-Out Program**

After finally receiving grant funding, the agency has completed 6 change-outs for low-income households and 11 bounties. Currently the agency has 34 change-out, 15 rebates and 4 bounties in progress.

**3. Education & Outreach Program**

On June 7th the agency made a presentation on wildfire smoke to approximately 30 members of the Yakima Better Breathers Club, a group sponsored by the Respiratory Clinic of Virginia Mason Memorial Hospital. The presentation took place in the Respiratory Clinic of the hospital.

# ACTION

# ITEMS

CLEAN AIR

# Executive Memorandum

**Date of Release:** August 2, 2018

**Date of Consideration:** August 9, 2018

**To:** YRCAA Board of Directors

**From:** Office of the Executive Director

**Subject:** Fiscal Program Report

Keith M. Hurley

**Issue:** Fiscal Reports

**Discussion:** June and July 2018 Accounts Payable (AP) and Payroll Authorizations are enclosed for your approval. The Budget Verification Analysis (BVA) and Supplemental Income documents are included as informational items.

**Recommendation(s):** Accept and approve by minute action June and July 2018 AP Fiscal Vouchers, totaling $55,242.09, and the June and July Payroll Authorizations, totaling $118,213.67.

Encl (5)

## AUTHORIZATION FOR ELECTRONIC FUNDS TRANSFER

### Direct Deposit Payroll & Payroll Taxes

**Date:** 6/28/2018

**District:** Yakima Regional Clean Air Agency

**Contact Person:** Christa Owen

**Address:** 329 North First Street, Yakima, WA 98901

**Telephone No. 834-2050 ext 104** **Telefax No. 834-2060**

Authorization is given for the Yakima County Treasurer to electronically transfer the amounts listed below:

**Name of Bank:** Key Bank of Washington

**ABA Routing Number:** [redacted]

**Bank Account Number:** [redacted]

**Payroll Date:** **July 2, 2018**

**Transfer Amount(s):** **$ 60,099.20**

**Total Amount of Electronic Transfer:** **$ 60,099.20**

**Authorizing Signatures (*No facsimile signatures accepted.*):**

Keith M. Hurley
Auditing Officer

Chairman Board of Directors

Christa Owen
Alternate Auditing Officer

Date June 28, 2018

Note: The Yakima County Treasurer's Office must receive the completed authorization by 12:00 noon, two (2) business days prior to payroll date. An original must be provided to the County Treasurer's Office if a telefax is sent. *Do not consider a telefax delivered until you have verified with the Treasurer's Office that it has been received.*

Contact Persons at County Treasurer's Office: **Cindy**

Telephone Number: 509-574-2780 Telefax Number: 509-574-2801

(01-2008)

CLEAN AIR

*Yakima Regional Clean Air Agency*
*Phone: (509) 834-2050*

*329 North First Street, Yakima WA 98901*
*www.yakimacleanair.org*



June 26, 2018

**Fund 614-614 YRCAA**

**Fund 614-141 Enterprise**

| Name | Warrant/MICR # | GL # | Amount | Date |
|---|---|---|---|---|
| Abadan Reprographics | 33431 | 4801 | $ 86.07 | 6/27/2018 |
| Alliant Communications | 33432 | 4101 | $ 383.04 | 6/27/2018 |
| Bradley A. Mellotte | 33433 | 4501 | $ 3,801.40 | 6/27/2018 |
| Carl Brookshire** | 33434 | 4301 | $ 85.32 | 6/27/2018 |
| Austin Copenhaver* | 33435 | 4101 | $ 250.00 | 6/27/2018 |
| Mark Edler** | 33436 | 4301 | $ 85.32 | 6/27/2018 |
| FedEx | 33437 | 4202 | $ 39.57 | 6/27/2018 |
| KeyBank** | 33438 | Various | $ 2,468.08 | 6/27/2018 |
| Northwest Community Action Center* | 33439 | 4101 | $ 200.00 | 6/27/2018 |
| Ron's Office Equipment | 33440 | 3101 | $ 111.86 | 6/27/2018 |
| Joe Trepanier | 33441 | 4901 | $ 126.00 | 6/27/2018 |
| Yakima County Sheriff's Department | 33442 | 4101 | $ 65.00 | 6/27/2018 |

**$ 7,701.66**

***Reimbursement from Grant**

****NOC/Enterprise**

This is to certify that the invoices and warrants above for the Yakima Regional Clean Air Agency have been examined, audited and approved by the Alternate Auditing Officer for payment.

Total Amount: **$ 7,701.66**

Christa Owen 6/27/2018
Christa Owen, Alternate Auditing Officer

8/9/2018 Keith M. Hurley 6/27/2018
Jon DeVaney, Board Chairman — Keith M. Hurley, Auditing Officer

CLEAN AIR

Yakima Regional Clean Air Agency
Phone: (509) 834-2050

329 North First Street, Yakima WA 98901
www.yakimacleanair.org



June 12, 2018

**Fund 614-614 YRCAA**

**Fund 614-141 Enterprise**

| Name | Warrant/MICR # | GL # | Amount | Date |
|---|---|---|---|---|
| Charter Communications | 33419 | 4201 | $ 649.87 | 6/15/2018 |
| Crystal Springs | 33420 | 3101 | $ 61.83 | 6/15/2018 |
| Cuillier Law Office | 33421 | 4101 | $ 1,554.00 | 6/15/2018 |
| Daily Sun News | 33422 | 4401 | $ 52.50 | 6/15/2018 |
| Enduris of Washington | 33423 | 4801 | $ 250.00 | 6/15/2018 |
| Leaf | 33424 | 4501 | $ 186.07 | 6/15/2018 |
| Menke Jackson Law Firm | 33425 | 4101 | $ 1,406.25 | 6/15/2018 |
| Pitney Bowes Global Financial Services | 33426 | 4501 | $ 256.40 | 6/15/2018 |
| TranSource | 33427 | 3101 | $ 33.52 | 6/15/2018 |
| Verizon Wireless | 33428 | 4201 | $ 337.76 | 6/15/2018 |
| Washington County Fair Complex** | 33429 | 4501 | $ 522.00 | 6/15/2018 |
| YRCAA | 33430 | 4901 | $ 417.73 | 6/15/2018 |

**$ 5,727.93**

***Reimbursement from Grant**

****NOC/Enterprise**

This is to certify that the invoices and warrants above for the Yakima Regional Clean Air Agency have been examined, audited and approved by the Alternate Auditing Officer for payment.

Total Amount: **$ 5727.93**

Christa Owen 6/15/2018
Christa Owen, Alternate Auditing Officer

8/9/2018 Keith M Hurley 6/15/2018
Jon DeVaney, Board Chairman — Keith M. Hurley, Auditing Officer

## AUTHORIZATION FOR ELECTRONIC FUNDS TRANSFER

### Direct Deposit Payroll & Payroll Taxes

**Date:** 7/30/2018

**District:** Yakima Regional Clean Air Agency

**Contact Person:** Christa Owen

**Address:** 329 North First Street, Yakima, WA 98901

**Telephone No. 834-2050 ext 104** **Telefax No. 834-2060**

Authorization is given for the Yakima County Treasurer to electronically transfer the amounts listed below:

**Name of Bank:** Key Bank of Washington

**ABA Routing Number:** [redacted]

**Bank Account Number:** [redacted]

**Payroll Date:** **August 1, 2018**

**Transfer Amount(s):** **$ 58,114.47**

**Total Amount of Electronic Transfer:** **$ 58,114.47**

**Authorizing Signatures (*No facsimile signatures accepted.*):**

Keith M. Hurley
Auditing Officer

Chairman Board of Directors

Christa Owen
Alternate Auditing Officer

Date July 30, 2018

Note: The Yakima County Treasurer's Office must receive the completed authorization by 12:00 noon, two (2) business days prior to payroll date. An original must be provided to the County Treasurer's Office if a telefax is sent. *Do not consider a telefax delivered until you have verified with the Treasurer's Office that it has been received.*

Contact Persons at County Treasurer's Office: **Cindy**

Telephone Number: 509-574-2780 Telefax Number: 509-574-2801

(01-2008)

CLEAN AIR

Yakima Regional Clean Air Agency
Phone: (509) 834-2050

329 North First Street, Yakima WA 98901
www.yakimacleanair.org

July 13, 2018

**Fund 614-614 YRCAA**

**Fund 614-141 Enterprise**

| Name | Warrant/MICR # | GL # | Amount | Date |
|---|---|---|---|---|
| Abadan Reprographics | 33443 | 4801 | $ 137.89 | 7/16/2018 |
| Advanced Digital Imaging LLC | 33444 | 4801 | $ 169.84 | 7/16/2018 |
| Charter Communications | 33445 | 4201 | $ 649.87 | 7/16/2018 |
| Coleman Oil Company | 33446 | 3201 | $ 122.46 | 7/16/2018 |
| Crystal Springs | 33447 | 3101 | $ 45.43 | 7/16/2018 |
| Cuillier Law Office | 33448 | 4101 | $ 4,270.00 | 7/16/2018 |
| Invisible Ink | 33449 | 4101 | $ 102.50 | 7/16/2018 |
| Leaf | 33450 | 4501 | $ 186.07 | 7/16/2018 |
| Menke Jackson Law Firm | 33451 | 4101 | $ 787.50 | 7/16/2018 |
| Nth Degree Environmental Engineering Solutions | 33452 | 4101 | $ 900.00 | 7/16/2018 |
| Carl Slagg* | 33453 | 4101 | $ 250.00 | 7/16/2018 |
| Terrace Heights Development, LLC | 33454 | 4501 | $ 8,906.64 | 7/16/2018 |
| Verizon Wireless | 33455 | 4201 | $ 337.32 | 7/16/2018 |
| YRCAA | 33456 | 4901 | $ 564.91 | 7/16/2018 |
| Yakima County Printing Department* | 33457 | 3101 | $ 280.24 | 7/16/2018 |
| | | | **$ 17,710.67** | |

***Reimbursement from Grant**

****NOC/Enterprise**

This is to certify that the invoices and warrants above for the Yakima Regional Clean Air Agency have been examined, audited and approved by the Alternate Auditing Officer for payment.

Total Amount: **$ 17,710.67**

Christa Owen 7/16/2018
Christa Owen, Alternate Auditing Officer

8/9/2018 Keith M. Hurley 7/16/2018
Jon DeVaney, Board Chairman
Keith M. Hurley, Auditing Officer

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July 13, 2018

**Fund 614-614 YRCAA**

**Fund 614-141 Enterprise**

| Name | Warrant/MICR # | GL # | Amount | Date |
|---|---|---|---|---|
| Abadan Reprographics | 33443 | 4801 | $ 137.89 | 7/16/2018 |
| Advanced Digital Imaging LLC | 33444 | 4801 | $ 169.84 | 7/16/2018 |
| Charter Communications | 33445 | 4201 | $ 649.87 | 7/16/2018 |
| Coleman Oil Company | 33446 | 3201 | $ 122.46 | 7/16/2018 |
| Crystal Springs | 33447 | 3101 | $ 45.43 | 7/16/2018 |
| Cuillier Law Office | 33448 | 4101 | $ 4,270.00 | 7/16/2018 |
| Invisible Ink | 33449 | 4101 | $ 102.50 | 7/16/2018 |
| Leaf | 33450 | 4501 | $ 186.07 | 7/16/2018 |
| Menke Jackson Law Firm | 33451 | 4101 | $ 787.50 | 7/16/2018 |
| Nth Degree Environmental Engineering Solutions | 33452 | 4101 | $ 900.00 | 7/16/2018 |
| Carl Slagg* | 33453 | 4101 | $ 250.00 | 7/16/2018 |
| Terrace Heights Development, LLC | 33454 | 4501 | $ 8,906.64 | 7/16/2018 |
| Verizon Wireless | 33455 | 4201 | $ 337.32 | 7/16/2018 |
| YRCAA | 33456 | 4901 | $ 564.91 | 7/16/2018 |
| Yakima County Printing Department* | 33457 | 3101 | $ 280.24 | 7/16/2018 |
| | | | **$ 17,710.67** | |

***Reimbursement from Grant**

****NOC/Enterprise**

This is to certify that the invoices and warrants above for the Yakima Regional Clean Air Agency have been examined, audited and approved by the Alternate Auditing Officer for payment.

Total Amount: **$ 17,710.67**

Christa Owen 7/16/2018
Christa Owen, Alternate Auditing Officer

8/9/2018 Keith M. Hurley 7/16/2018
Jon DeVaney, Board Chairman Keith M. Hurley, Auditing Officer

FY 2018 Monthly BVA

| June 2018<br>Report Date: July 12, 2018 | | Budget | Actual Current | Actual Year to Date | Year to Date % of Budget |
|---|---|---|---|---|---|
| **REVEUNE** | | | | | |
| **REVENUE 614 YRCAA Base Operations** | | | | | |
| **Stationary Source Permit Fees** | | | | | |
| 614-32199001 | Minor Sources | $ 161,700 | $ - | $ 165,724 | 102.5% |
| 614-32199005 | Synthetic Minor Sources | $ 21,280 | $ - | $ 18,620 | 87.5% |
| 614-32199004 | Complex Sources | $ 19,554 | $ - | $ 23,130 | 118.3% |
| 614-32290001 | Title V Sources | $ 122,845 | $ - | $ 101,625 | 82.7% |
| 614-32190002 | New Source Review | $ 31,500 | $ 3,767 | $ 55,437 | 176.0% |
| | *Subtotal, Stationary Source Permit Fees* | ***$ 356,879*** | ***$ 3,767*** | ***$ 364,536*** | ***102.1%*** |
| **Burn Permit Fees** | | | | | |
| 614-32290005 | Residential Burn Permits | $ 63,120 | $ 7,248 | $ 60,816 | 96.3% |
| 614-32290007 | Agricultural Burn Permits | $ 28,000 | $ 1,670 | $ 41,118 | 146.9% |
| 614-32290011 | Conditional Use Burn Permits | $ 2,000 | $ - | $ 2,326 | 116.3% |
| | *Subtotal, Burn Permit Fees* | ***$ 93,120*** | ***$ 8,918*** | ***$ 104,260*** | ***112.0%*** |
| **Compliance Fees** | | | | | |
| 614-32190005 | Asbestos Removal Fees | $ 32,200 | $ 3,139 | $ 30,874 | 95.9% |
| 614-32199007 | Construction Dust Control Fees | $ 8,365 | $ 981 | $ 7,988 | 95.5% |
| | *Subtotal, Compliance Fees* | ***$ 40,565*** | ***$ 4,120*** | ***$ 38,862*** | ***95.8%*** |
| | *Subtotal, All Permit Fee Revenue* | ***$ 490,564*** | ***$ 16,805*** | ***$ 507,658*** | ***103.5%*** |
| **Base Grants** | | | | | |
| 614-33366001 | EPA, Core Grant | $ 97,172 | $ - | $ 111,068 | 114.3% |
| 614-33403101 | DOE, Core Grant | $ 77,283 | $ - | $ 78,301 | 101.3% |
| | *Subtotal, Base Grants* | ***$ 174,455*** | ***$ -*** | ***$ 189,369*** | ***108.5%*** |
| **Fines & Penalties** | | | | | |
| 614-35990001 | Civil Penalty | $ 2,500 | $ 2,200 | $ 28,839 | |
| 614-35990001 | Other Fines | $ - | $ - | $ - | |
| | *Subtotal, Fines & Penalties* | ***$ 2,500*** | ***$ 2,200*** | ***$ 28,839*** | |
| **Supplemental Income** | | | | | |
| 614-33831001 | Supplemental Income | $ 100,360 | $ - | $ 100,258 | 99.9% |
| | *Subtotal, Supplemental Income* | ***$ 100,360*** | ***$ -*** | ***$ 100,258*** | ***99.9%*** |
| **Other Income** | | | | | |
| 614-36111001 | Interest | $ 2,024 | $ 539 | $ 5,204 | 257.1% |
| 614-36990014 | Miscellaneous Income | $ 150 | $ - | $ 1,143 | 762.0% |
| | *Subtotal, Other Income* | ***$ 2,174*** | ***$ 539*** | ***$ 6,347*** | ***292.0%*** |
| | *Total YRCAA Base Operations Revenue* | ***$ 770,053*** | ***$ 19,544*** | ***$ 832,471*** | ***108.1%*** |
| **REVENUE 614 YRCAA Grant Operations** | | | | | |
| 614-33403105 | Wood Stove Ed | $ 5,331 | $ - | $ 5,331 | 100.0% |
| 614-33403108 | PM 2.5 | $ 21,050 | $ - | $ 21,050 | 100.0% |
| 614-33403107 | Woodstove Change-out | $ 132,000 | $ - | $ 42,164 | 31.9% |
| | *Total YRCAA Grant Operations Revenue* | ***$ 158,381*** | ***$ -*** | ***$ 68,545*** | ***43.3%*** |
| **REVENUE Enterprise Operations** | | | | | |
| 614-34317001 | VE Certification Fees | $ 79,800 | $ 8,825 | $ 88,000 | 110.3% |
| 614-34317002 | Other Enterprise Revenue | $ 415 | $ - | $ 75 | 18.1% |
| | *Subtotal , Enterprise Revenue* | ***$ 80,215*** | ***$ 8,825*** | ***$ 88,075*** | ***109.8%*** |
| | *Total Base, Grant and Enterprise Revenue* | ***$ 1,008,649*** | ***$ 28,369*** | ***$ 989,090*** | ***98.1%*** |

FY 2018 Monthly BVA

| June 2018<br>Report Date: July 12, 2018 | | Budget | Actual Current | Actual Year to Date | Year to Date % of Budget |
|---|---|---|---|---|---|
| **EXPENSES** | | | | | |
| **EXPENSES 614 YRCAA Base Operations** | | | | | |
| **Salaries** | | | | | |
| 614-1001 | Salaries | $ 495,855 | $ 41,469 | $ 494,987 | 99.8% |
| 614-2002 | Benefits | $ 179,781 | $ 14,570 | $ 173,914 | 96.7% |
| 614-1003 | Overtime | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Salaries*** | ***$ 675,636*** | ***$ 56,039*** | ***$ 668,902*** | ***99.0%*** |
| **Supplies** | | | | | |
| 614-3101 | Office Supplies | $ 7,180 | $ 263 | $ 4,155 | 57.9% |
| 614-3101 | Safety Equipment | $ - | $ - | $ - | #DIV/0! |
| 614-3201 | Vehicles, Gas | $ 2,780 | $ 33 | $ 1,568 | 56.4% |
| 614-3501 | Small Tools/Equipment | $ 300 | $ - | $ - | 0.0% |
| 614-3502 | Computer Network | $ 8,900 | $ 460 | $ 10,213 | 114.8% |
| | ***Subtotal, Supplies*** | ***$ 19,160*** | ***$ 757*** | ***$ 15,936*** | ***83.2%*** |
| **Services** | | | | | |
| 614-4101 | Professional Services | $ 20,365 | $ 3,408 | $ 39,873 | 195.8% |
| 614-4101 | Laboratory Analyses | $ 200 | $ - | $ 20 | 10.2% |
| 614-4125 | Treasurer, Yakima County | $ 1,375 | $ 85 | $ 770 | 56.0% |
| 614-4201 | Communications, Phones/Internet | $ 13,152 | $ 988 | $ 12,240 | 93.1% |
| 614-4202 | Postage | $ 3,690 | $ 40 | $ 1,881 | 51.0% |
| 614-4301 | Travel & Transportation | $ 2,950 | $ 1,726 | $ 5,391 | 182.7% |
| 614-4401 | Public Education | $ 4,000 | $ - | $ 1,857 | 46.4% |
| 614-4401 | Publications, Legal Notices | $ 1,000 | $ 53 | $ 3,031 | 303.1% |
| 614-4501 | Rents & Leases, Equipment | $ 3,260 | $ 442 | $ 3,281 | 100.7% |
| 614-4501 | Rents & Leases, Space | $ 43,659 | $ 3,801 | $ 47,818 | 109.5% |
| 614-4601 | Insurance | $ 12,662 | $ - | $ 12,791 | 101.0% |
| 614-4801 | Maintenance, Motor Vehicles | $ 2,450 | $ 250 | $ 2,433 | 99.3% |
| 614-4801 | Maintenance, Equipment | $ 2,065 | $ 86 | $ 1,767 | 85.6% |
| 614-4801 | Maintenance, Computers | $ 265 | $ - | $ - | 0.0% |
| 614-4801 | Maintenance, Building | $ 875 | $ - | $ 1,686 | 192.7% |
| 614-4901 | Memberships | $ 540 | $ 25 | $ 880 | 163.0% |
| 614-4901 | Training | $ 2,900 | $ - | $ 2,294 | 79.1% |
| 614-4901 | Service Chgs & Interest | $ 4,600 | $ 418 | $ 6,138 | 133.4% |
| 614-4901 | Miscellaneous Services | $ 7,205 | $ 126 | $ 696 | 9.7% |
| 614-4901 | DOE Oversite Fees | $ 4,787 | $ - | $ 3,840 | 80.2% |
| | ***Subtotal, Services*** | ***$ 132,000*** | ***$ 11,447*** | ***$ 148,686*** | ***112.6%*** |
| **Capital Out-Lay & Fixed Assets** | | | | | |
| 614-6401 | Capital Out-Lay/Fixed Assets | $ 6,500 | $ - | $ 25,416 | 391.0% |
| | ***Total YRCAA Base Operations Expenses*** | ***$ 833,296*** | ***$ 68,243*** | ***$ 858,939*** | ***103.1%*** |
| **EXPENSES 614 YRCAA Grant Operations** | | | | | |
| **614-33403105 Wood Stove Ed** | | | | | |
| **Salaries** | | | | | |
| 614-1001 | Salaries | $ 3,956 | $ 1,287 | $ 3,089 | 78.1% |
| 614-2002 | Benefits | $ 1,462 | $ 452 | $ 1,085 | 74.2% |
| 614-1003 | Overtime | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Salaries*** | ***$ 5,418*** | ***$ 1,740*** | ***$ 4,174*** | ***77.0%*** |
| **Supplies** | | | | | |
| 614-3101 | Office Supplies | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Supplies*** | ***$ -*** | ***$ -*** | ***$ -*** | ***#DIV/0!*** |

**FY 2018 Monthly BVA**

| June 2018<br>Report Date: July 12, 2018 | | Budget | Actual Current | Actual Year to Date | Year to Date % of Budget |
|---|---|---|---|---|---|
| **Services** | | | | | |
| 614-4139 | Professional Services | $ - | $ - | $ 120 | #DIV/0! |
| 614-4202 | Postage | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Services*** | ***$ -*** | ***$ -*** | ***$ 120*** | ***#DIV/0!*** |
| | ***Subtotal, Woodstove Grant Expenses*** | ***$ 5,418*** | ***$ 1,740*** | ***$ 4,294*** | ***79.3%*** |
| **614-33403108 PM2.5** | | | | | |
| **Salaries** | | | | | |
| 614-1001 | Salaries | $ 15,367 | $ 1,020 | $ 14,887 | 96.9% |
| 614-2002 | Benefits | $ 5,683 | $ 358 | $ 4,029 | 70.9% |
| 614-1003 | Overtime | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Salaries*** | ***$ 21,050*** | ***$ 1,378*** | ***$ 18,917*** | ***89.9%*** |
| **Supplies** | | | | | |
| 614-3101 | Office Supplies | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Supplies*** | ***$ -*** | ***$ -*** | ***$ -*** | ***#DIV/0!*** |
| **Services** | | | | | |
| 614-4101 | Professional Services | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Services*** | ***$ -*** | ***$ -*** | ***$ -*** | ***#DIV/0!*** |
| **Capital Out-Lay & Fixed Assets** | | | | | |
| 614-6401 | Capital Out-Lay/Fixed Assets | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, PM 2.5 Grant Expenses*** | ***$ 21,050*** | ***$ 1,378*** | ***$ 18,917*** | ***89.9%*** |
| **614-33403107 Woodstove Change-out** | | | | | |
| **Salaries** | | | | | |
| 614-1001 | Salaries | $ 12,715 | $ 697 | $ 1,633 | 12.8% |
| 614-2002 | Benefits | $ 5,555 | $ 245 | $ 574 | 10.3% |
| 614-1003 | Overtime | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Salaries*** | ***$ 18,270*** | ***$ 942*** | ***$ 2,207*** | ***12.1%*** |
| **Supplies** | | | | | |
| 614-3101 | Office Supplies | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Supplies*** | ***$ -*** | ***$ -*** | ***$ -*** | ***#DIV/0!*** |
| **Services** | | | | | |
| 614-4101 | Professional Services | $ 120,400 | $ 450 | $ 5,070 | 4.2% |
| | ***Subtotal, Services*** | ***$ 120,400*** | ***$ 450*** | ***$ 5,070*** | ***4.2%*** |
| **Capital Out-Lay & Fixed Assets** | | | | | |
| 614-6401 | Capital Out-Lay/Fixed Assets | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Woodstove Change-out Grant Expenses*** | ***$ 138,670*** | ***$ 1,392*** | ***$ 7,277*** | ***5.2%*** |
| | ***Total, Grant Operations Expenses*** | ***$ 165,138*** | ***$ 4,510*** | ***$ 30,488*** | ***18.5%*** |
| **EXPENSES 141 Enterprise Operations** | | | | | |
| **Salaries** | | | | | |
| 141-1001 | Salaries | $ 12,776 | $ - | $ 16,413 | 128.5% |
| 141-2002 | Benefits | $ 4,722 | $ - | $ 5,767 | 122.1% |
| 141-1003 | Overtime | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Salaries*** | ***$ 17,498*** | ***$ -*** | ***$ 22,180*** | ***126.8%*** |

FY 2018 Monthly BVA

| June 2018<br>Report Date: July 12, 2018 | | Budget | Actual Current | Actual Year to Date | Year to Date % of Budget |
|---|---|---|---|---|---|
| **Supplies** | | | | | |
| 141-3101 | Office Supplies | $ 400 | $ - | $ 1,073 | 268.2% |
| 141-3201 | Vehicles, Gas | $ 1,700 | $ 168 | $ 1,233 | 72.5% |
| 141-3501 | Small Tools/Equipment | $ 200 | $ - | $ - | 0.0% |
| | *Subtotal , Supplies* | *$ 2,300* | *$ 168* | *$ 2,306* | *100.3%* |
| **Services** | | | | | |
| 141-4101 | Professional Services | $ - | $ - | $ - | #DIV/0! |
| 141-4202 | Postage | $ - | $ - | $ 32 | #DIV/0! |
| 141-4301 | Travel & Transportation | $ 6,550 | $ 171 | $ 8,206 | 125.3% |
| 141-4501 | Rents & Leases, Space | $ 4,100 | $ 522 | $ 3,106 | 75.7% |
| 141-4801 | Maintenance, Motor Vehicles | $ 200 | $ - | $ 52 | 26.0% |
| 141-4801 | Maintenance, Equipment | $ 500 | $ - | $ 750 | 150.1% |
| 141-4901 | Miscellaneous Services | $ - | $ - | $ - | #DIV/0! |
| | *Subtotal, Services* | *$ 11,350* | *$ 693* | *$ 12,146* | *107.0%* |
| **Capital Out-Lay & Fixed Assets** | | | | | |
| 141-4500 | Capital Out-Lay/Fixed Assets | $ - | $ - | $ - | #DIV/0! |
| | *Total Enterprise Operations Expenses* | *$ 31,148* | *$ 860* | *$ 36,632* | *117.6%* |
| ***Summary of Revenue vs Expenses:*** | | | | | |
| ***Prior-Year Carry Over Funds*** | | *$ 125,000* | *$ -* | *$ 125,000* | |
| ***Total Revenue, Base, Grants & Enterprise*** | | *$ 1,133,649* | *$ 28,369* | *$ 1,114,090* | *98.3%* |
| ***Total Expenses, Base, Grants & Enterprise*** | | *$ 1,029,582* | *$ 73,613* | *$ 926,060* | *89.9%* |
| ***Fund Balance*** | | *$ 104,067* | *$ (45,244)* | *$ 188,031* | |
| ***Operating Reserves*** | | **$ (20,933)** | | *$ -* | |
| ***Estimated Available Fund Balance*** | | **$ 125,000** | | *$ 188,031* | |

FY 2019 Monthly BVA

| July 2018<br>Report Date: August 9, 2018 | | Budget | | Actual Current | | Actual Year to Date | Year to Date % of Budget |
|---|---|---|---|---|---|---|---|
| **REVEUNE** | | | | | | | |
| **REVENUE 614 YRCAA Base Operations** | | | | | | | |
| **Stationary Source Permit Fees** | | | | | | | |
| 614-32190001 Minor Sources | $ | 162,000 | $ | 453 | $ | 453 | 0.3% |
| 614-32190008 Synthetic Minor Sources | $ | 19,950 | $ | - | $ | - | 0.0% |
| 614-32190006 Complex Sources | $ | 20,300 | $ | - | $ | - | 0.0% |
| 614-32290001 Title V Sources | $ | 122,500 | $ | 60,037 | $ | 60,037 | 49.0% |
| 614-32190002 New Source Review | $ | 31,500 | $ | 800 | $ | 800 | 2.5% |
| *Subtotal, Stationary Source Permit Fees* | *$* | *356,250* | *$* | *61,290* | *$* | *61,290* | *17.2%* |
| **Burn Permit Fees** | | | | | | | |
| 614-32290005 Residential Burn Permits | $ | 60,500 | $ | 3,312 | $ | 3,312 | 5.5% |
| 614-32290007 Agricultural Burn Permits | $ | 30,500 | $ | 1,484 | $ | 1,484 | 4.9% |
| 614-32290011 Conditional Use Burn Permits | $ | 2,000 | $ | - | $ | - | 0.0% |
| *Subtotal, Burn Permit Fees* | *$* | *93,000* | *$* | *4,796* | *$* | *4,796* | *5.2%* |
| **Compliance Fees** | | | | | | | |
| 614-32190005 Asbestos Removal Fees | $ | 31,000 | $ | 2,083 | $ | 2,083 | 6.7% |
| 614-32190009 Construction Dust Control Fees | $ | 8,200 | $ | 637 | $ | 637 | 7.8% |
| *Subtotal, Compliance Fees* | *$* | *39,200* | *$* | *2,720* | *$* | *2,720* | *6.9%* |
| *Subtotal, All Permit Fee Revenue* | *$* | *488,450* | *$* | *68,806* | *$* | *68,806* | *14.1%* |
| **Base Grants** | | | | | | | |
| 614-33366001 EPA, Core Grant | $ | 107,395 | $ | 26,849 | $ | 26,849 | 25.0% |
| 614-33403101 DOE, Core Grant | $ | 76,800 | $ | 19,204 | $ | 19,204 | 25.0% |
| *Subtotal, Base Grants* | *$* | *184,195* | *$* | *46,054* | *$* | *46,054* | *25.0%* |
| **Fines & Penalties** | | | | | | | |
| 614-35990001 Civil Penalty | $ | 2,500 | $ | 4,005 | $ | 4,005 | |
| 614-35990001 Other Fines | $ | - | $ | - | $ | - | |
| *Subtotal, Fines & Penalties* | *$* | *2,500* | *$* | *4,005* | *$* | *4,005* | |
| **Supplemental Income** | | | | | | | |
| 614-33831001 Supplemental Income | $ | 100,789 | $ | 19,982 | $ | 19,982 | 19.8% |
| *Subtotal, Supplemental Income* | *$* | *100,789* | *$* | *19,982* | *$* | *19,982* | *19.8%* |
| **Other Income** | | | | | | | |
| 614-36111001 Interest | $ | 2,100 | $ | 548 | $ | 548 | 26.1% |
| 614-36990014 Miscellaneous Income | $ | 200 | $ | 150 | $ | 150 | 75.0% |
| *Subtotal, Other Income* | *$* | *2,300* | *$* | *698* | *$* | *698* | *30.4%* |
| *Total YRCAA Base Operations Revenue* | *$* | *778,234* | *$* | *139,544* | *$* | *139,544* | *17.9%* |
| **REVENUE 614 YRCAA Grant Operations** | | | | | | | |
| 614-33403105 Wood Stove Ed | $ | 5,331 | $ | - | $ | - | 0.0% |
| 614-33403108 PM 2.5 | $ | 21,050 | $ | 5,263 | $ | 5,263 | 25.0% |
| 614-33403107 Woodstove Change-out | $ | 550,000 | $ | 138 | $ | 138 | 0.0% |
| *Total YRCAA Grant Operations Revenue* | *$* | *576,381* | *$* | *5,400* | *$* | *5,400* | *0.9%* |
| **REVENUE Enterprise Operations** | | | | | | | |
| 614-34317001 VE Certification Fees | $ | 80,000 | $ | - | $ | - | 0.0% |
| 614-34317002 Other Enterprise Revenue | $ | 100 | $ | - | $ | - | 0.0% |
| *Subtotal , Enterprise Revenue* | *$* | *80,100* | *$* | *-* | *$* | *-* | *0.0%* |
| *Total Base, Grant and Enterprise Revenue* | *$* | *1,434,715* | *$* | *144,944* | *$* | *144,944* | *10.1%* |

**FY 2019 Monthly BVA**

| July 2018<br>Report Date: August 9, 2018 | | Budget | Actual Current | Actual Year to Date | Year to Date % of Budget |
|---|---|---|---|---|---|
| **EXPENSES<br>EXPENSES 614 YRCAA Base Operations** | | | | | |
| **Salaries** | | | | | |
| 614-1001 | Salaries | $ 484,932 | $ 38,080 | $ 38,080 | 7.9% |
| 614-2002 | Benefits | $ 183,571 | $ 13,380 | $ 13,380 | 7.3% |
| 614-1003 | Overtime | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Salaries*** | ***$ 668,503*** | ***$ 51,460*** | ***$ 51,460*** | ***7.7%*** |
| **Supplies** | | | | | |
| 614-3101 | Office Supplies | $ 6,500 | $ 201 | $ 201 | 3.1% |
| 614-3101 | Safety Equipment | $ 500 | $ - | $ - | 0.0% |
| 614-3201 | Vehicles, Gas | $ 2,500 | $ 122 | $ 122 | 4.9% |
| 614-3501 | Small Tools/Equipment | $ 200 | $ - | $ - | 0.0% |
| 614-3502 | Computer Network | $ 4,000 | $ 70 | $ 70 | 1.7% |
| | ***Subtotal, Supplies*** | ***$ 13,700*** | ***$ 394*** | ***$ 394*** | ***2.9%*** |
| **Services** | | | | | |
| 614-4101 | Professional Services | $ 35,000 | $ 9,597 | $ 9,597 | 27.4% |
| 614-4101 | Laboratory Analyses | $ 200 | $ 26 | $ 26 | 13.0% |
| 614-4125 | Treasurer, Yakima County | $ 1,014 | $ - | $ - | 0.0% |
| 614-4201 | Communications, Phones/Internet | $ 12,800 | $ 1,072 | $ 1,072 | 8.4% |
| 614-4202 | Postage | $ 3,500 | $ - | $ - | 0.0% |
| 614-4301 | Travel & Transportation | $ 3,200 | $ - | $ - | 0.0% |
| 614-4401 | Public Education | $ 4,000 | $ - | $ - | 0.0% |
| 614-4401 | Publications, Legal Notices | $ 2,000 | $ - | $ - | 0.0% |
| 614-4501 | Rents & Leases, Equipment | $ 3,282 | $ 186 | $ 186 | 5.7% |
| 614-4501 | Rents & Leases, Space | $ 52,659 | $ 12,708 | $ 12,708 | 24.1% |
| 614-4601 | Insurance | $ 12,600 | $ - | $ - | 0.0% |
| 614-4801 | Maintenance, Motor Vehicles | $ 2,400 | $ 224 | $ 224 | 9.3% |
| 614-4801 | Maintenance, Equipment | $ 2,000 | $ 138 | $ 138 | 6.9% |
| 614-4801 | Maintenance, Computers | $ 250 | $ - | $ - | 0.0% |
| 614-4801 | Maintenance, Building | $ 1,500 | $ - | $ - | 0.0% |
| 614-4901 | Memberships | $ 920 | $ - | $ - | 0.0% |
| 614-4901 | Training | $ 2,500 | $ - | $ - | 0.0% |
| 614-4901 | Service Chgs & Interest | $ 5,000 | $ 565 | $ 565 | 11.3% |
| 614-4901 | Miscellaneous Services | $ 6,750 | $ - | $ - | 0.0% |
| 614-4901 | DOE Oversite Fees | $ 4,787 | $ - | $ - | 0.0% |
| | ***Subtotal, Services*** | ***$ 156,362*** | ***$ 24,515*** | ***$ 24,515*** | ***15.7%*** |
| **Capital Out-Lay & Fixed Assets** | | | | | |
| 614-6401 | Capital Out-Lay/Fixed Assets | $ - | $ - | $ - | #DIV/0! |
| | ***Total YRCAA Base Operations Expenses*** | ***$ 838,565*** | ***$ 76,369*** | ***$ 76,369*** | ***9.1%*** |
| **EXPENSES 614 YRCAA Grant Operations<br>614-33403105 Wood Stove Ed** | | | | | |
| **Salaries** | | | | | |
| 614-1001 | Salaries | $ 3,867 | $ 388 | $ 388 | 10.0% |
| 614-2002 | Benefits | $ 1,464 | $ 136 | $ 136 | 9.3% |
| 614-1003 | Overtime | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Salaries*** | ***$ 5,331*** | ***$ 524*** | ***$ 524*** | ***9.8%*** |
| **Supplies** | | | | | |
| 614-3101 | Office Supplies | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Supplies*** | ***$ -*** | ***$ -*** | ***$ -*** | ***#DIV/0!*** |

**FY 2019 Monthly BVA**

| **July 2018**<br>**Report Date:** August 9, 2018 | | **Budget** | **Actual Current** | **Actual Year to Date** | **Year to Date % of Budget** |
|---|---|---|---|---|---|
| **Services** | | | | | |
| 614-4139 | Professional Services | $ 120 | $ - | $ - | 0.0% |
| 614-4202 | Postage | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Services*** | ***$ 120*** | ***$ -*** | ***$ -*** | ***0.0%*** |
| | ***Subtotal, Woodstove Grant Expenses*** | ***$ 5,451*** | ***$ 524*** | ***$ 524*** | ***9.6%*** |
| **614-33403108 PM2.5** | | | | | |
| **Salaries** | | | | | |
| 614-1001 | Salaries | $ 15,270 | $ 994 | $ 994 | 6.5% |
| 614-2002 | Benefits | $ 5,780 | $ 349 | $ 349 | 6.0% |
| 614-1003 | Overtime | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Salaries*** | ***$ 21,050*** | ***$ 1,344*** | ***$ 1,344*** | ***6.4%*** |
| **Supplies** | | | | | |
| 614-3101 | Office Supplies | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Supplies*** | ***$ -*** | ***$ -*** | ***$ -*** | ***#DIV/0!*** |
| **Services** | | | | | |
| 614-4101 | Professional Services | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Services*** | ***$ -*** | ***$ -*** | ***$ -*** | ***#DIV/0!*** |
| **Capital Out-Lay & Fixed Assets** | | | | | |
| 614-6401 | Capital Out-Lay/Fixed Assets | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, PM 2.5 Grant Expenses*** | ***$ 21,050*** | ***$ 1,344*** | ***$ 1,344*** | ***6.4%*** |
| **614-33403107 Woodstove Change-out** | | | | | |
| **Salaries** | | | | | |
| 614-1001 | Salaries | $ 59,845 | $ 3,542 | $ 3,542 | 5.9% |
| 614-2002 | Benefits | $ 22,655 | $ 1,244 | $ 1,244 | 5.5% |
| 614-1003 | Overtime | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Salaries*** | ***$ 82,500*** | ***$ 4,786*** | ***$ 4,786*** | ***5.8%*** |
| **Supplies** | | | | | |
| 614-3101 | Office Supplies | $ 50 | $ 185 | $ 185 | 370.0% |
| | ***Subtotal, Supplies*** | ***$ 50*** | ***$ 185*** | ***$ 185*** | ***370.0%*** |
| **Services** | | | | | |
| 614-4101 | Professional Services | $ 467,500 | $ 15,432 | $ 15,432 | 3.3% |
| | ***Subtotal, Services*** | ***$ 467,500*** | ***$ 15,432*** | ***$ 15,432*** | ***3.3%*** |
| **Capital Out-Lay & Fixed Assets** | | | | | |
| 614-6401 | Capital Out-Lay/Fixed Assets | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Woodstove Change-out Grant Expenses*** | ***$ 550,050*** | ***$ 20,404*** | ***$ 20,404*** | ***3.7%*** |
| | ***Total, Grant Operations Expenses*** | ***$ 576,551*** | ***$ 22,272*** | ***$ 22,272*** | ***3.9%*** |
| **EXPENSES 141 Enterprise Operations** | | | | | |
| **Salaries** | | | | | |
| 141-1001 | Salaries | $ 11,810 | $ - | $ - | 0.0% |
| 141-2002 | Benefits | $ 4,470 | $ - | $ - | 0.0% |
| 141-1003 | Overtime | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Salaries*** | ***$ 16,280*** | ***$ -*** | ***$ -*** | ***0.0%*** |

**FY 2019 Monthly BVA**

| **July 2018**<br>**Report Date:** August 9, 2018 | | **Budget** | **Actual Current** | **Actual Year to Date** | **Year to Date % of Budget** |
|---|---|---|---|---|---|
| **Supplies** | | | | | |
| 141-3101 | Office Supplies | $ 200 | $ - | $ - | 0.0% |
| 141-3201 | Vehicles, Gas | $ 1,000 | $ - | $ - | 0.0% |
| 141-3501 | Small Tools/Equipment | $ 200 | $ - | $ - | 0.0% |
| | ***Subtotal , Supplies*** | ***$ 1,400*** | ***$ -*** | ***$ -*** | ***0.0%*** |
| **Services** | | | | | |
| 141-4101 | Professional Services | $ - | $ - | $ - | #DIV/0! |
| 141-4202 | Postage | $ - | $ - | $ - | #DIV/0! |
| 141-4301 | Travel & Transportation | $ 3,000 | $ 1,371 | $ 1,371 | 45.7% |
| 141-4501 | Rents & Leases, Space | $ 2,000 | $ - | $ - | 0.0% |
| 141-4801 | Maintenance, Motor Vehicles | $ 200 | $ - | $ - | 0.0% |
| 141-4801 | Maintenance, Equipment | $ 500 | $ - | $ - | 0.0% |
| 141-4901 | Miscellaneous Services | $ - | $ - | $ - | #DIV/0! |
| | ***Subtotal, Services*** | ***$ 5,700*** | ***$ 1,371*** | ***$ 1,371*** | ***24.1%*** |
| **Capital Out-Lay & Fixed Assets** | | | | | |
| 141-4500 | Capital Out-Lay/Fixed Assets | $ - | $ - | $ - | #DIV/0! |
| | ***Total Enterprise Operations Expenses*** | ***$ 23,380*** | ***$ 1,371*** | ***$ 1,371*** | ***5.9%*** |
| ***Summary of Revenue vs Expenses:*** | | | | | |
| | ***Prior-Year Carry Over Funds*** | ***$ 125,000*** | ***$ -*** | ***$ 125,000*** | |
| | ***Total Revenue, Base, Grants & Enterprise*** | ***$ 1,559,715*** | ***$ 144,944*** | ***$ 269,944*** | ***17.3%*** |
| | ***Total Expenses, Base, Grants & Enterprise*** | ***$ 1,438,496*** | ***$ 100,011*** | ***$ 100,011*** | ***7.0%*** |
| | ***Fund Balance*** | **$ 121,219** | ***$ 44,933*** | ***$ 169,933*** | |
| | ***Operating Reserves*** | **$ (3,781)** | | | |
| | ***Estimated Available Fund Balance*** | **$ 125,000** | | | |

**YAKIMA REGIONAL CLEAN AIR AGENCY**
**SUPPLEMENTAL INCOME STATUS for CY 2018 on July 31, 2018**
**CY 2018 $.40 PER CAPITA (Rounded Amounts)**

| City/Town | Past Due | Assessment Amount | Total Amt Due | Date Received | Amount Received | Balance Due | Responses |
|---|---|---|---|---|---|---|---|
| **Grandview** | $ - | $ 4,464 | $ 4,464 | 1/11/2018 | $ 4,464 | $ - | Paid in full |
| **Granger** | $ - | $ 1,552 | $ 1,552 | 7/2/2018 | $ 1,164 | $ 388 | Pd 3/4 |
| **Harrah** | $ - | $ 260 | $ 260 | 1/30/2018 | $ 260 | $ - | Paid in full |
| **Mabton** | $ - | $ 926 | $ 926 | 1/12/2018 | $ 926 | $ - | Paid in full |
| **Moxee** | $ - | $ 1,582 | $ 1,582 | 1/16/2018 | $ 1,582 | $ - | Paid in full |
| **Naches** | $ - | $ 338 | $ 338 | 1/11/2018 | $ 338 | $ - | Paid in full |
| **Selah** | $ - | $ 3,012 | $ 3,012 | 1/12/2018 | $ 3,012 | $ - | Paid in full |
| **Sunnyside** | $ - | $ 6,616 | $ 6,616 | 1/19/2018; 4/13/2018; 7/12/2018 | $ 4,962 | $ 1,654 | Pd 3/4 |
| **Tieton** | $ - | $ 514 | $ 514 | 1/25/2018 | $ 514 | $ - | Paid in full |
| **Toppenish** | $ - | $ 3,620 | $ 3,620 | 1/25/2018 | $ 3,620 | $ - | Paid in full |
| **Union Gap** | $ - | $ 2,480 | $ 2,480 | 1/25/2018 | $ 2,480 | $ - | Paid in full |
| **Wapato** | $ - | $ 2,016 | $ 2,016 | 1/22/2018 | $ 2,016 | $ - | Paid in full |
| **City of Yakima** | $ - | $ 37,364 | $ 37,364 | 1/19/2018; 4/16/2018; 7/16/2018 | $ 28,023 | $ 9,341 | Pd 3/4 |
| **Zillah** | $ - | $ 1,258 | $ 1,258 | 1/22/2018 | $ 1,258 | $ - | Paid in full |
| **Yakima Co.** | $ - | $ 34,358 | $ 34,358 | 1/1/2018; 4/1/2018; 7/1/2018 | $ 25,796 | $ 8,563 | Pd 3/4 |
| **Totals:** | **$ -** | **$ 100,360** | **$ 100,360** | | **$ 80,415** | **$ 19,946** | |

*Yakima Regional Clean Air Agency*
*329 North First Street, Yakima WA 98901*
*(509) 834-2050 yakimacleanair.org*

# Executive Memorandum

**Date of Release:** August 2, 2018

**Date of Consideration:** August 9, 2018

**To:** The YRCAA Board of Directors

**From:** Office of the Executive Director

**Subject:** Revisions to the FY 2019 Budget *Keith M. Hurley*

**Issue:** On June 15, 2018 the agency received additional funding from the Washington State Department of Ecology (Ecology) in the amount of $550,000. This funding was awarded as part of Ecology's Air Quality Local Partner Residential Wood Smoke Reduction funding program.

**Discussion:** The $550,000 grant award significantly revises the previously approved agency FY 2019 Budget. Specifically, YRCAA Woodstove Grant revenues and expenditures require revisions to reflect the increased funding and the corresponding increased expenditures. The attached errata sheet summarizes all revisions to the FY 2019 budget.

**Recommendation(s):** It is recommended that the Board approve Resolution 2018-07 revising the previously approved FY2019 Budget to better reflect Grant revenues and expenditures.

Attach.
FY2019 Budget Errata Sheet
Resolution 2018-07

*AGENDA ITEM 8.2*

**FY2019 Budget Revisions Errata Sheet**

The following table identifies revisions to the previously approved FY2019 Budget as a result of a grant award of $550,000 from the WSDOE Air Quality Local Partner Residential Wood Smoke Reduction funding program.

| Page | Subject | | |
|---|---|---|---|
| **Revenue** | | **Approved FY19** | **Revision** |
| 4 of 42 | Woodstove Change Out Grant | $ 132,000 | $ 550,000 |
| 4 of 42 | Total Grant Operations Revenue | $ 158,381 | $ 576,381 |
| 5 of 42 | Total Base, Grant, and Enterprise Revenue | $1,016,715 | $1,454,715 |
| **Expenses** | | **Approved FY19** | **Revision** |
| 5 of 42 | Base Operations Salaries | $ 484,932 | $ 439,161 |
| 5 of 42 | Base Operations Benefits | $ 183,571 | $ 166,245 |
| 5 of 42 | Subtotal Base Operations Salaries | $ 668,503 | $ 605,406 |
| 5 of 42 | Base Operations Services, Miscellaneous Services | $ 1,000 | $ 6,750 |
| 5 of 42 | Base Operations Services Subtotal | $ 150,612 | $ 156,362 |
| 5 of 42 | Total Base Operations Expenses | $ 832,815 | $ 775,468 |
| 6 of 42 | Woodstove Change Out Salaries | $ 14,076 | $ 59,845 |
| 6 of 42 | Woodstove Change Out Benefits | $ 5,328 | $ 22,655 |
| 6 of 42 | Subtotal Woodstove Change Out Salaries | $ 19,404 | $ 82,500 |
| 7 of 42 | Woodstove Change Professional Services | $ 120,400 | $ 467,500 |
| 7 of 42 | Subtotal Woodstove Change Services | $ 120,400 | $ 467,500 |
| 7 of 42 | Subtotal Woodstove Change Services | $ 139,854 | $ 550,050 |
| 7 of 42 | Total Grant Operations Expenses | $ 166,355 | $ 576,551 |
| 7 of 42 | Total Revenue: Base, Grant, Enterprise & Carry Over | $1,141,715 | $1,559,715 |
| 7 of 42 | Total Expenses: Base, Grant & Enterprise | $1,022,550 | $1,375,399 |
| 7 of 42 | Fund Balance | $ 119,165 | $ 184,316 |
| 7 of 42 | Operating & Capital Reserves Contribution/Withdrawal | $ (5,835) | $ 59,316 |
| **Charts and Text** | | | |
| The following listed Charts and text was revised to accommodate the above changes. | | | |
| | | **Approved FY19** | **Revision** |
| 9 of 42 | Fig. 1 Total YRCAA Revenue Summary | $1,141,715 | $1,559,715 |
| 9 of 42 | Fig. 2 Total YRCAA Expense Summary | $1,022,550 | $1,375,399 |
| 10 of 42 | Fig. 4 Base Operations Expenses | $ 832,815 | $ 775,468 |
| 11 of 42 | Fig. 5 Grant Operations Revenue | $ 166,355 | $ 576,381 |
| 11 of 42 | Fig. 6 Grant Operations Expenses | $ 166,355 | $ 576,551 |
| 19 of 42 | Woodstove Change Out Grant | $ 132,000 | $ 550,000 |
| 19 of 42 | Total Grant Operations Revenue | $ 158,381 | $ 576,381 |
| 20 of 42 | Total Est. YRCAA Revenue Chart- Est. Grant | $ 158,381 | $ 576,381 |

| | | | |
|---|---|---|---|
| | Rev. | | |
| 20 of 42 | Total Est. YRCAA Revenue Chart-Total Grant | $1,016,715 | $1,454,715 |
| 20 of 42 | Base Operations Salaries | $ 484,932 | $ 439,161 |
| 20 of 42 | Base Operations Benefits | $ 183,571 | $ 166,245 |
| 25 of 42 | Base Operations Services, Miscellaneous Services | $ 1,000 | $ 6,750 |
| 25 of 42 | Subtotal Base Operations Services | $ 150,612 | $ 156,362 |
| 25 of 42 | Total Base Operations Expenses | $ 832,815 | $ 775,468 |
| 29 of 42 | Woodstove Change Out Salaries | $ 14,076 | $ 59,845 |
| 29 of 42 | Woodstove Change Out Benefits | $ 5,328 | $ 22,655 |
| 29 of 42 | Woodstove Change Professional Services | $ 120,400 | $ 467,500 |
| 29 of 42 | Subtotal Woodstove Change Services | $ 139,854 | $ 550,050 |
| 30 of 42 | Total Grant Operations Expenses | $ 166,355 | $ 576,551 |
| 33 of 42 | Total Base Operations Expenses | $ 832,815 | $ 775,468 |
| 33 of 42 | Total Grant Operations Expenses | $ 166,355 | $ 576,551 |
| 33 of 42 | Total Estimated YRCAA Expenses | $1,022,550 | $1,375,399 |
| **Appendices** | | | |
| The following appendices were revised to accommodate the appropriate changes. | | | |
| **Appendix D** | | | |
| 37 of 42 | Revised FY 2019 YRCAA Resource Allocation | | |

# *Yakima Regional Clean Air Agency*

# Revised
# Fiscal Year (FY) 2019
# Budget

# *Yakima Regional Clean Air Agency*

# Fiscal Year 2019 Budget Report

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## ***Table of Contents (cont'd)*** ***Page***

# *Forward*

This budget aligns all expenditures with their appropriate revenue sources. It contains itemized accounting of revenues and expenses for two organizational divisions conducting work within three Operational Areas; Base Operations, Grant Operations, and Enterprise Operations. Outlined below is the work plan for each area.

1.0 Purpose
This work plan defines the work to be accomplished and the resources needed to accomplish that work for the coming fiscal year.

2.0 Plan Elements
The plan contains the following elements for action required to determine what work should be done and how it will be funded:

- 2.1 Identify the Operational Area;
- 2.2 Identify the work programs to be carried out in each area;
- 2.3 Assign a level of importance (High, Medium or Low) to each work program;
- 2.4 Estimate resources required to accomplish the work, based on historical data and predictable future costs of salaries, supplies, services, and capital outlay;
- 2.5 Identify available revenues designated to fund the resources, per program;
- 2.6 Identify any programs which have shortfalls in revenue; and
- 2.7 Supplement designated revenues for programs which are underfunded, and/or eliminate work, to assure the most important work programs are fully funded.

3.0 Work Programs
Work programs carried out in the three operational areas are funded by specific funding sources. Programs that are under-funded are subsidized by *supplemental income*.

3.1 Base Operations (9.12 FTE, $605,406)
Base Operations work programs are funded by fees, supplemental income and base grants. Following is a list of the programs carried out by each division:

3.1.1 Administrative Division Programs (3.28 FTE, $217,946)

i. Administrative Programs
   a. $PM_{2.5}$ Emissions Reduction Program - H
   b. Information Technology Program - H
   c. Front Office Administration - M
   d. Grant Management - H
   e. Program Development - L
   f. Administrative Code Management - L
   g. Human Resource Management - H
   h. Fleet Management - M
   i. Asset Management - M
   j. Insurance Program - H
   k. Legal Program - M
   l. File System Management - M
   m. Public Records Management - H
   n. Legislative Program - L

o. Board of Directors - H
p. Stakeholder Liaison - H
q. Staff Training Program - M
r. Safety Program - H
s. Continuous Improvement Program - M

ii. Education / Outreach Programs
a. $PM_{2.5}$ / Wood Stove Education - H
b. Program Development - M
c. Interagency Liaison - M
d. Website Maintenance - H
e. Outreach Materials Development and Distribution - M
f. Small Business Assistance - M
g. Media Relations Program - M
h. Public Presentations and Workshops Program - H

iii. Fiscal Programs
a. Budget Development and Accountability - H
b. Accounts Payable / Receivable - H
c. Payroll - H
d. Retirement Program - M

3.1.2 Compliance & Engineering Division Programs (5.83 FTE, $387,460)
i. Permitting
a. Air Operating Permit Program - H
b. Registration Program - H
c. New Source Review Program - H
d. Daily Burn Status Program - H
e. Burn Allocation Program - H
f. Agricultural Burn Program - H
g. Residential Burn Program - H

ii. Planning
a. SIP Planning Program - H
b. SEPA Program - L
c. Emission Inventory Program - M
d. Air Quality Modeling - M
e. Rule Development Program - M
f. Interagency Coordination - L
g. Air Monitoring Data Analysis – L

iii. Compliance Assurance
a. $PM_{2.5}$ Emissions Reduction Program- H
b. Area Source Inspection Program - H
c. Air Operating Permit Source Inspection Program - H
d. Complaint Response Program - H
e. Asbestos Program - H
f. Dust Mitigation Program - H
g. Outdoor Burning Program - H

h. Agricultural Burning Program - H
i. Pollution Control Hearings Board Liaison - M
j. Upset / Breakdown Program - M
k. Enforcement Program – H

iv. Air Monitoring
a. Yakima $PM_{10}$ Monitor Program (FEM) - H
b. Sunnyside $PM_{2.5}$ Nephelometer Monitor Program – H

v. Small Business Assistance
c. Compliance Assistance - H
d. Technical Assistance - H
e. Program Development - L

3.2 Grant Operations (1.64 FTE, $108,881)
Grant Operations work is funded by special grants and currently includes the following grant programs:

3.2.1 Administrative Division Programs (1.32 FTE, $87,831)
i. Wood Stove Education Grant Program - H
ii. Wood Stove Change-Out Grant Program - H

3.2.2 Compliance & Engineering Division Programs (.32 FTE, $21,050)
i. Yakima $PM_{2.5}$ Sequential Monitor Program (FEM) - H
ii. Yakima $PM_{2.5}$ Speciation Monitor Program - H
iii. Yakima $PM_{2.5}$ Continuous Monitor Program (FEM) - H

3.3 Enterprise Operations (.25 FTE, $16,280)
Enterprise Operations are self-funded and are managed by the Administrative Division.

4.0 Overview of Priorities
All work programs identified in Section 3 have been assigned an order of importance of High (H), Medium (M) or Low (L). Resources will be allocated according to the order of importance.

5.0 Resource Allocation
Resources to accomplish the work in each program were estimated. Resources include the costs of salaries, supplies, services and capital/fixed assets. Revenue sources to fund the resources were also identified. (See Appendix F - Resource Allocation Summary)

6.0 Accountability
The Fiscal Programs Manager will meet monthly with the Executive Director and will prepare a Budget Verification Analysis (BVA) to be presented at the monthly Board Meetings. The Executive Director will conduct Quarterly Budget Reconciliations with the Fiscal Programs Manager and Division Supervisors to determine if the work programs are within the budgetary constraints and to identify any necessary resource adjustments.

| YRCAA FY 2019 Comparative Budget Analysis | | FY2018 Adopted Budget | FY2018 Projected Final Actual | FY2019 Proposed Budget |
|---|---|---|---|---|
| ***REVENUE*** | **614 YRCAA Base Operations** | | | |
| **Stationary Source Permit Fees** | | | | |
| 614-32190001 | Minor Sources | $ 161,700 | $ 175,237 | $ 162,000 |
| 614-32190008 | Synthetic Minor Sources | $ 21,280 | $ 18,620 | $ 19,950 |
| 614-32190006 | Complex Sources | $ 19,554 | $ 23,130 | $ 20,300 |
| 614-32290001 | Title V Sources | $ 122,845 | $ 101,625 | $ 122,500 |
| 614-32190002 | New Source Review | $ 31,500 | $ 43,678 | $ 31,500 |
| | ***Subtotal, Stationary Source Permit Fees*** | ***$ 356,879*** | ***$ 362,290*** | ***$ 356,250*** |
| **Burn Permit Fees** | | | | |
| 614-32290005 | Residential Burn Permits | $ 63,120 | $ 58,688 | $ 60,500 |
| 614-32290007 | Agricultural Burn Permits | $ 28,000 | $ 36,252 | $ 30,500 |
| 614-32290011 | Conditional Use Burn Permits | $ 2,000 | $ 2,654 | $ 2,000 |
| | ***Subtotal, Burn Permit Fees*** | ***$ 93,120*** | ***$ 97,594*** | ***$ 93,000*** |
| **Compliance Fees** | | | | |
| 614-32190005 | Asbestos Removal Fees | $ 32,200 | $ 30,795 | $ 31,000 |
| 614-32190009 | Construction Dust Control Fees | $ 8,365 | $ 8,063 | $ 8,200 |
| | ***Subtotal, Compliance Fees*** | ***$ 40,565*** | ***$ 38,858*** | ***$ 39,200*** |
| | ***Subtotal, All Permit Fee Revenue*** | ***$ 490,564*** | ***$ 498,742*** | ***$ 488,450*** |
| **Base Grants** | | | | |
| 614-33366001 | EPA, Core Grant | $ 97,172 | $ 111,067 | $ 107,395 |
| 614-33403101 | DOE, Core Grant | $ 77,283 | $ 78,301 | $ 76,800 |
| | ***Subtotal, Base Grants*** | ***$ 174,455*** | ***$ 189,368*** | ***$ 184,195*** |
| **Fines & Penalties** | | | | |
| 614-35990001 | Civil Penalty | $ 2,500 | $ 33,154 | $ 2,500 |
| 614-35990001 | Other Fines | $ - | $ - | $ - |
| | ***Subtotal, Fines & Penalties*** | ***$ 2,500*** | ***$ 33,154*** | ***$ 2,500*** |
| **Supplemental Income** | | | | |
| 614-33831001 | Supplemental Income | $ 100,360 | $ 100,259 | $ 100,789 |
| | ***Subtotal, Supplemental Income*** | ***$ 100,360*** | ***$ 100,259*** | ***$ 100,789*** |
| **Other Income** | | | | |
| 614-36111001 | Interest | $ 2,024 | $ 4,867 | $ 2,100 |
| 614-36990014 | Miscellaneous Income | $ 150 | $ 1,143 | $ 200 |
| | ***Subtotal, Other Income*** | ***$ 2,174*** | ***$ 6,010*** | ***$ 2,300*** |
| | ***Total Base Operations Revenue*** | ***$ 770,053*** | ***$ 827,533*** | ***$ 778,234*** |
| **REVENUE** | **614 YRCAA Grant Operations** | | | |
| 614-33403105 | Wood Stove Ed | $ 5,331 | $ 5,331 | $ 5,331 |
| 614-33403108 | PM 2.5 | $ 21,050 | $ 21,050 | $ 21,050 |
| 614-33403107 | Woodstove Change-out | $ 132,000 | $ 42,164 | $ 550,000 |
| | ***Total Grant Operations Revenue*** | ***$ 158,381*** | ***$ 68,545*** | ***$ 576,381*** |

| YRCAA FY 2019 Comparative Budget Analysis | FY2018 Adopted Budget | FY2018 Projected Final Actual | FY2019 Proposed Budget |
|---|---|---|---|
| ***REVENUE*** **Enterprise Operations** | | | |
| 614-34317001 VE Certification Fees | $ 79,800 | $ 90,025 | $ 80,000 |
| 614-34317002 Other Enterprise Revenue | $ 413 | $ 75 | $ 100 |
| *Subtotal , Enterprise Revenue* | ***$ 80,213*** | ***$ 90,100*** | ***$ 80,100*** |
| *Total Base, Grant and Enterprise Revenue* | ***$ 1,008,647*** | ***$ 968,178*** | ***$ 1,434,715*** |
| ***EXPENSES*** | | | |
| ***EXPENSES*** **614 YRCAA Base Operations** | | | |
| **Salaries** | | | |
| 614-1001 Salaries | $ 495,855 | $ 498,118 | $ 439,161 |
| 614-2002 Benefits | $ 179,781 | $ 175,014 | $ 166,245 |
| 614-1003 Overtime | $ - | $ - | $ - |
| *Subtotal, Salaries* | ***$ 675,636*** | ***$ 673,132*** | ***$ 605,406*** |
| **Supplies** | | | |
| 614-3101 Office Supplies | $ 7,180 | $ 4,889 | $ 6,500 |
| 614-3101 Safety Equipment | $ - | $ - | $ 500 |
| 614-3201 Vehicles, Gas | $ 2,780 | $ 1,658 | $ 2,500 |
| 614-3501 Small Tools/Equipment | $ 300 | $ - | $ 200 |
| 614-3502 Computer Network | $ 8,900 | $ 11,112 | $ 4,000 |
| *Subtotal, Supplies* | ***$ 19,160*** | ***$ 17,659*** | ***$ 13,700*** |
| **Services** | | | |
| 614-4101 Professional Services | $ 20,365 | $ 34,953 | $ 35,000 |
| 614-4101 Laboratory Analyses | $ 200 | $ 61 | $ 200 |
| 614-4192 Yakima County Services | $ 1,375 | $ 770 | $ 1,014 |
| 614-4201 Communications, Phones/Internet | $ 13,152 | $ 12,227 | $ 12,800 |
| 614-4202 Postage | $ 3,690 | $ 1,838 | $ 3,500 |
| 614-4301 Travel & Transportation | $ 2,950 | $ 3,698 | $ 3,200 |
| 614-4401 Public Education | $ 4,000 | $ 4,000 | $ 4,000 |
| 614-4401 Publications, Legal Notices | $ 1,000 | $ 3,099 | $ 2,000 |
| 614-4501 Rents & Leases, Equipment | $ 3,260 | $ 3,282 | $ 3,282 |
| 614-4501 Rents & Leases, Space | $ 43,659 | $ 43,659 | $ 52,659 |
| 614-4601 Insurance | $ 12,662 | $ 12,555 | $ 12,600 |
| 614-4801 Maintenance, Motor Vehicles | $ 2,450 | $ 2,316 | $ 2,400 |
| 614-4801 Maintenance, Equipment | $ 2,065 | $ 1,926 | $ 2,000 |
| 614-4801 Maintenance, Computers | $ 265 | $ - | $ 250 |
| 614-4801 Maintenance, Building | $ 875 | $ 1,931 | $ 1,500 |
| 614-4901 Memberships | $ 540 | $ 855 | $ 920 |
| 614-4901 Training | $ 2,900 | $ 2,469 | $ 2,500 |
| 614-4901 Service Charges & Interest | $ 4,600 | $ 5,113 | $ 5,000 |
| 614-4901 Miscellaneous Services | $ 7,205 | $ 900 | $ 6,750 |
| 614-4901 DOE Oversight Fees | $ 4,787 | $ 3,840 | $ 4,787 |
| *Subtotal, Services* | ***$ 132,000*** | ***$ 138,360*** | ***$ 156,362*** |
| **Capital Out-Lay & Fixed Assets** | | | |
| 614-6401 Capital Out-Lay/Fixed Assets | $ 6,500 | $ 25,416 | $ - |
| *Total Base Operations Expenses* | ***$ 833,296*** | ***$ 854,567*** | ***$ 775,468*** |

| YRCAA FY 2019 Comparative Budget Analysis | | FY2018 Adopted Budget | FY2018 Projected Final Actual | FY2019 Proposed Budget |
|---|---|---|---|---|
| ***EXPENSES*** | **614 YRCAA Grant Operations** | | | |
| | **614-33403105 Wood Stove Ed** | | | |
| **Salaries** | | | | |
| 614-1001 | Salaries | $ 3,956 | $ 3,956 | $ 3,867 |
| 614-2002 | Benefits | $ 1,462 | $ 1,462 | $ 1,464 |
| 614-1003 | Overtime | $ - | $ - | $ - |
| | ***Subtotal, Salaries*** | ***$ 5,418*** | ***$ 5,418*** | ***$ 5,331*** |
| **Supplies** | | | | |
| 614-3101 | Office Supplies | $ - | $ - | $ - |
| | ***Subtotal, Supplies*** | ***$ -*** | ***$ -*** | ***$ -*** |
| **Services** | | | | |
| 614-4139 | Professional Services | $ - | $ 120 | $ 120 |
| 614-4202 | Postage | $ - | $ - | $ - |
| | ***Subtotal, Services*** | $ - | $ 120 | $ 120 |
| | ***Subtotal, Woodstove Grant Expenses*** | ***$ 5,418*** | ***$ 5,538*** | ***$ 5,451*** |
| | **614-33403108 PM2.5** | | | |
| **Salaries** | | | | |
| 614-1001 | Salaries | $ 15,367 | $ 15,367 | $ 15,270 |
| 614-2002 | Benefits | $ 5,683 | $ 5,683 | $ 5,780 |
| 614-1003 | Overtime | $ - | $ - | $ - |
| | ***Subtotal, Salaries*** | ***$ 21,050*** | ***$ 21,050*** | ***$ 21,050*** |
| **Supplies** | | | | |
| 614-3101 | Office Supplies | $ - | $ - | $ - |
| | ***Subtotal, Supplies*** | ***$ -*** | ***$ -*** | ***$ -*** |
| **Services** | | | | |
| 614-4101 | Professional Services | $ - | $ - | $ - |
| | ***Subtotal, Services*** | ***$ -*** | ***$ -*** | ***$ -*** |
| **Capital Out-Lay & Fixed Assets** | | | | |
| 614-6401 | Capital Out-Lay/Fixed Assets | $ - | $ - | $ - |
| | ***Subtotal, PM 2.5 Grant Expenses*** | ***$ 21,050*** | ***$ 21,050*** | ***$ 21,050*** |
| | **614-33403107 Woodstove Change-out** | | | |
| **Salaries** | | | | |
| 614-1001 | Salaries | $ 12,715 | $ 936 | $ 59,845 |
| 614-2002 | Benefits | $ 5,555 | $ 329 | $ 22,655 |
| 614-1003 | Overtime | $ - | $ - | $ - |
| | ***Subtotal, Salaries*** | ***$ 18,270*** | ***$ 1,265*** | ***$ 82,500*** |
| **Supplies** | | | | |
| 614-3101 | Office Supplies | $ - | $ 43 | $ 50 |
| | ***Subtotal, Supplies*** | ***$ -*** | ***$ 43*** | ***$ 50*** |

| YRCAA FY 2019 Comparative Budget Analysis | | FY2018 Adopted Budget | FY2018 Projected Final Actual | FY2019 Proposed Budget |
|---|---|---|---|---|
| **Services** | | | | |
| 614-4101 | Professional Services | $ 120,400 | $ 4,620 | $ 467,500 |
| | *Subtotal, Services* | ***$ 120,400*** | ***$ 4,620*** | ***$ 467,500*** |
| **Capital Out-Lay & Fixed Assets** | | | | |
| 614-6401 | Capital Out-Lay/Fixed Assets | $ - | $ - | $ - |
| | *Subtotal, Woodstove Change-out Grant Expenses* | ***$ 138,670*** | ***$ 5928*** | ***$ 550,050*** |
| | *Total, Grant Operations Expenses* | ***$ 165,138*** | ***$ 32,516*** | ***$ 576,551*** |
| ***EXPENSES* 141 Enterprise Operations** | | | | |
| **Salaries** | | | | |
| 141-1001 | Salaries | $ 12,776 | $ 16,125 | $ 11,810 |
| 141-2002 | Benefits | $ 4,722 | $ 5,217 | $ 4,470 |
| 141-1003 | Overtime | $ - | $ - | $ - |
| | *Subtotal, Salaries* | ***$ 17,498*** | ***$ 21,342*** | ***$ 16,280*** |
| **Supplies** | | | | |
| 141-3101 | Office Supplies | $ 400 | $ 108 | $ 200 |
| 141-3201 | Vehicles, Gas | $ 1,700 | $ 693 | $ 1,000 |
| 141-3501 | Small Tools/Equipment | $ 200 | $ 200 | $ 200 |
| | *Subtotal , Supplies* | ***$ 2,300*** | ***$ 1,001*** | ***$ 1,400*** |
| **Services** | | | | |
| 141-4101 | Professional Services | $ - | $ - | $ - |
| 141-4202 | Postage | $ - | $ - | $ - |
| 141-4301 | Travel & Transportation | $ 6,550 | $ 2,021 | $ 3,000 |
| 141-4501 | Rents & Leases, Space | $ 4,100 | $ 1,147 | $ 2,000 |
| 141-4801 | Maintenance, Motor Vehicles | $ 200 | $ - | $ 200 |
| 141-4801 | Maintenance, Equipment | $ 500 | $ - | $ 500 |
| 141-4901 | Miscellaneous Services | $ - | $ - | $ - |
| | *Subtotal, Services* | ***$ 11,350*** | ***$ 3,168*** | ***$ 5,700*** |
| **Capital Out-Lay & Fixed Assets** | | | | |
| 141-4500 | Capital Out-Lay/Fixed Assets | $ - | $ - | $ - |
| | *Total Enterprise Operations Expenses* | ***$ 31,148*** | ***$ 25,511*** | ***$ 23,380*** |
| **Summary of Revenue vs Expenses:** | | | | |
| **Prior-Year Carry Over Funds** | | **$ 125,000** | **$ 125,000** | **$ 125,000** |
| **Total Revenue, Base, Grants, Enterprise & Carry Over** | | **$ 1,113,649** | **$ 1,111,178** | **$ 1,559,715** |
| **Total Expenses, Base, Grants & Enterprise** | | **$ 1,029,582** | **$ 912,594** | **$ 1,375,399** |
| **Fund Balance** | | **$ 104,067** | **$ 198,594** | **$ 184,316** |
| **Operating and Capital Reserves Contribution/Withdrawal** | | **$ (20,933)** | **$ 73,584** | **$ 59,316** |
| **Estimated Available Fund Balance** | | **$ 125,000** | **$ 125,000** | **$ 125,000** |

## COMPARATIVE SUMMARY OF TOTAL YRCAA FY2019 REVENUE & EXPENSES

### TOTAL YRCAA REVENUE SUMMARY $1,559,715

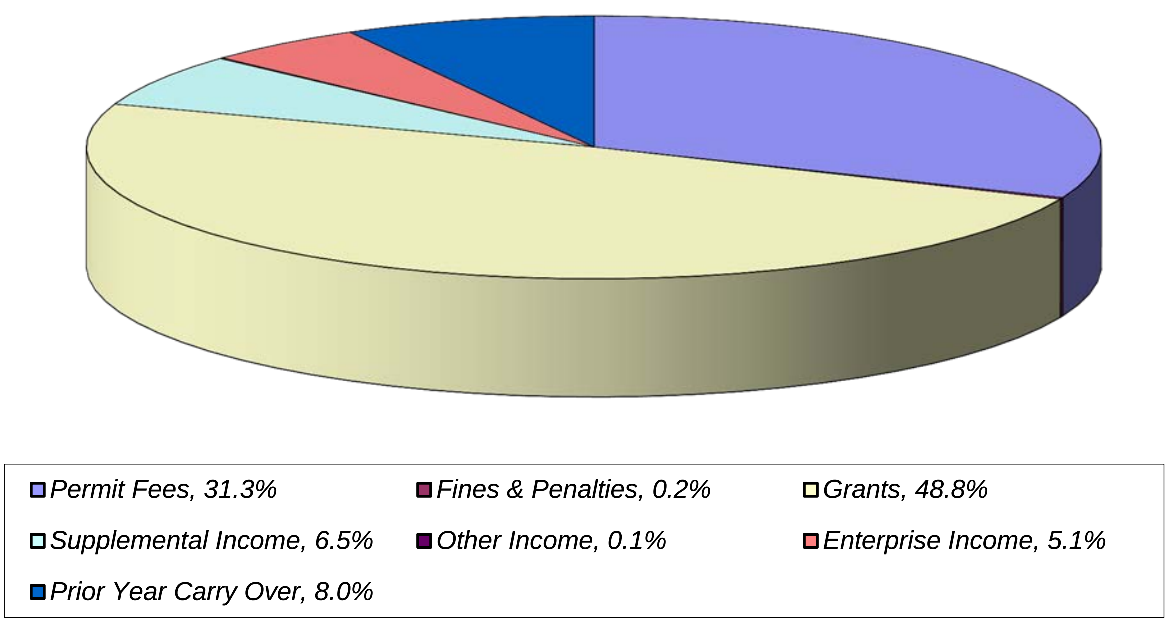



**Figure 1**

### TOTAL YRCAA EXPENSE SUMMARY $1,375,399

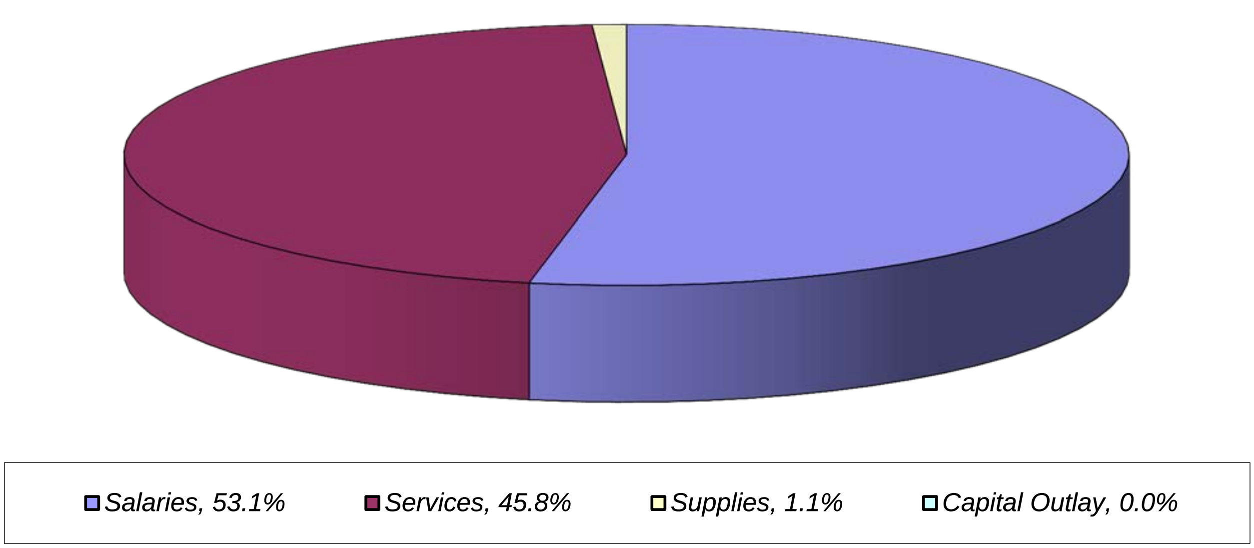



**Figure 2**

**COMPARATIVE SUMMARY OF YRCAA FY2019 BASE OPERATIONS REVENUE & EXPENSES**

**BASE OPERATIONS REVENUE $778,234**

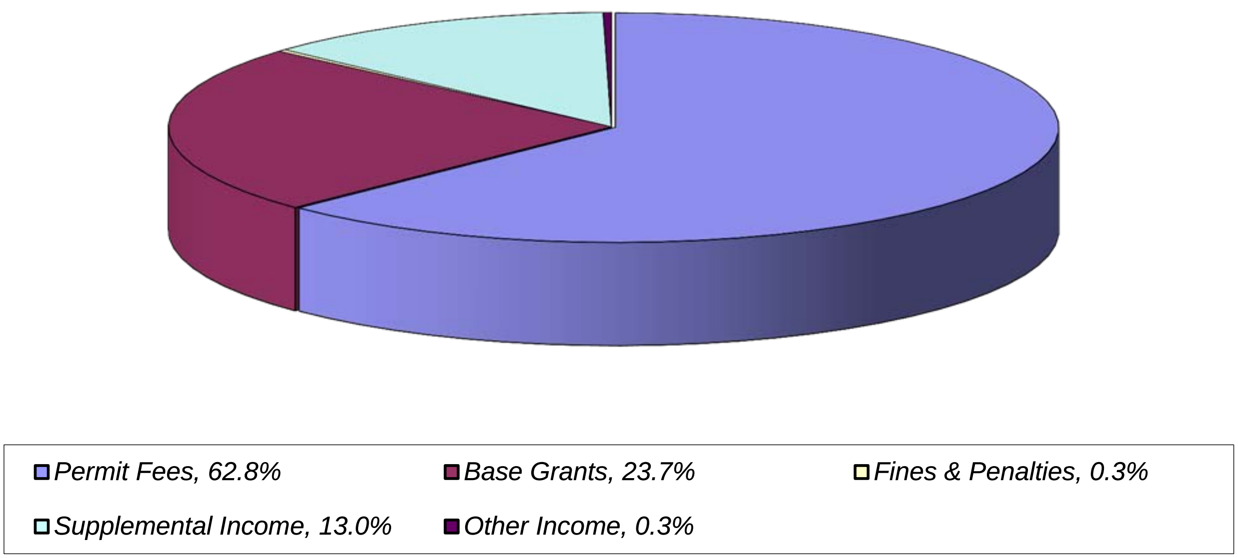



**Figure 3**

**BASE OPERATIONS EXPENSES $775,468**

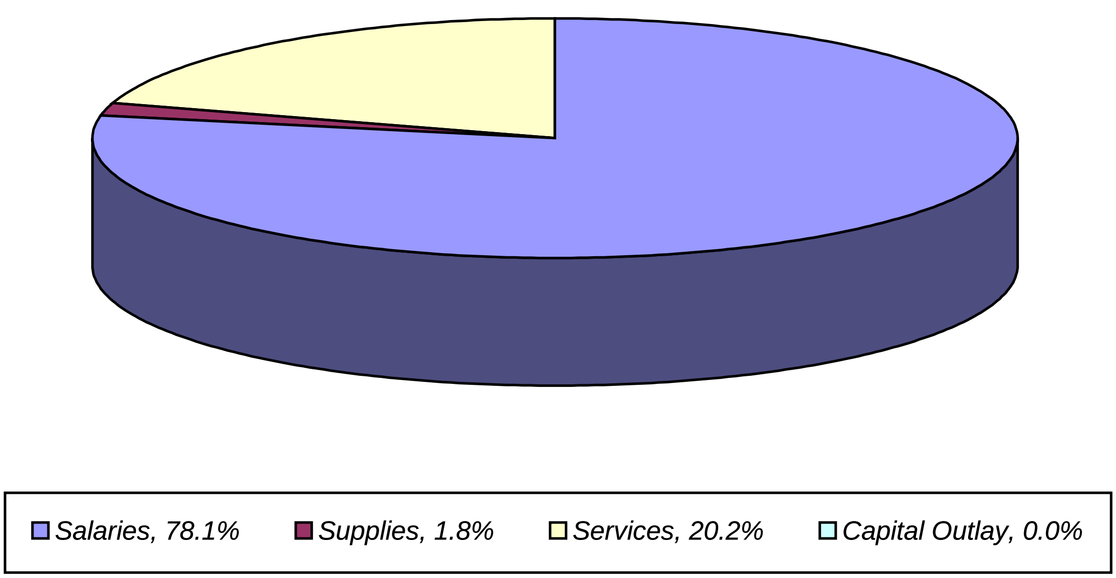



**Figure 4**

**GRANT OPERATIONS REVENUE $576,381**

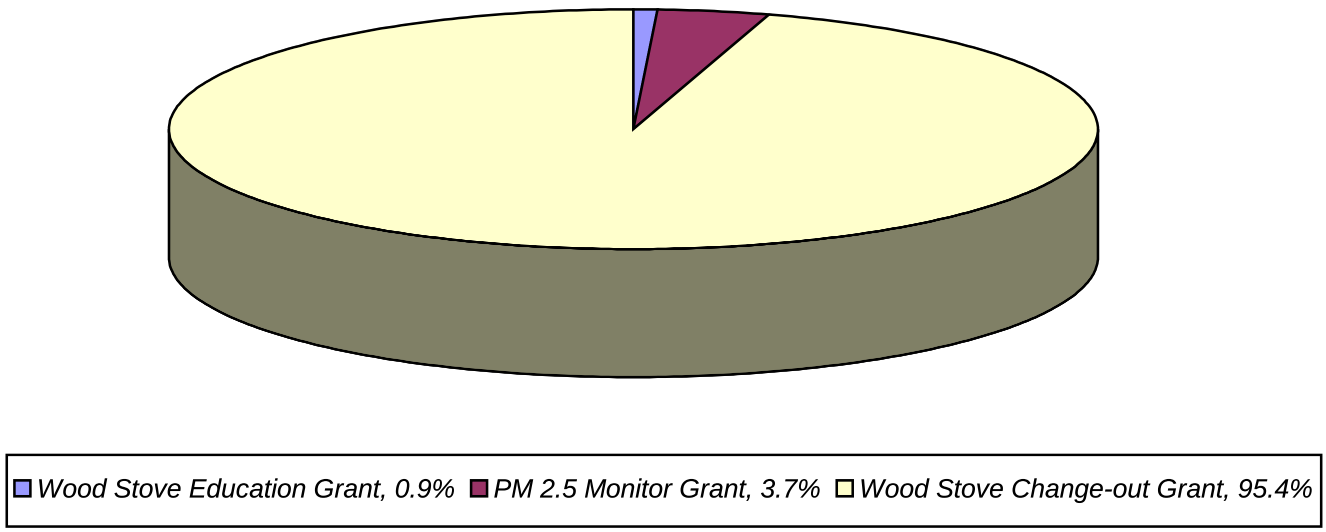



**Figure 5**

**GRANT OPERATIONS EXPENSES $576,551**

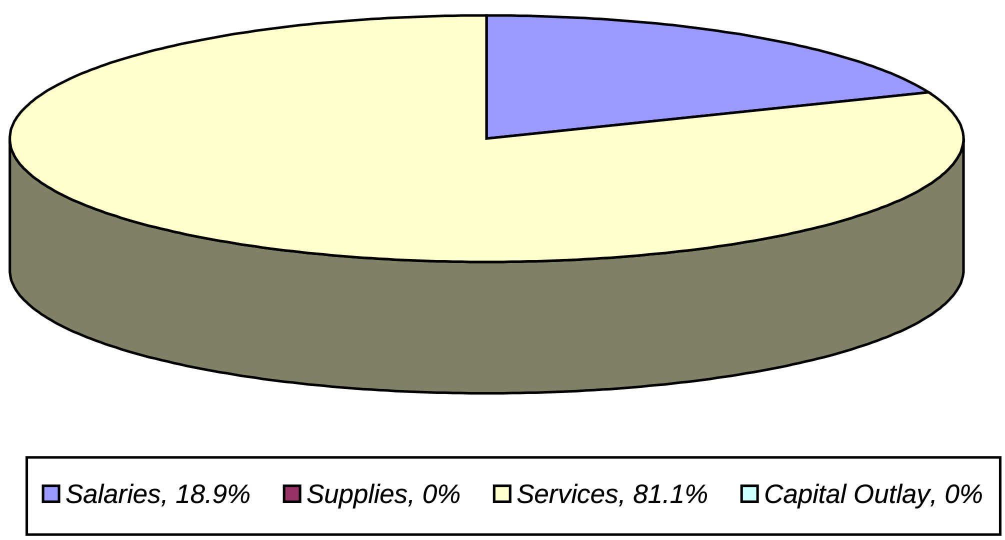



**Figure 6**

**ENTERPRISE OPERATIONS REVENUE $80,100**

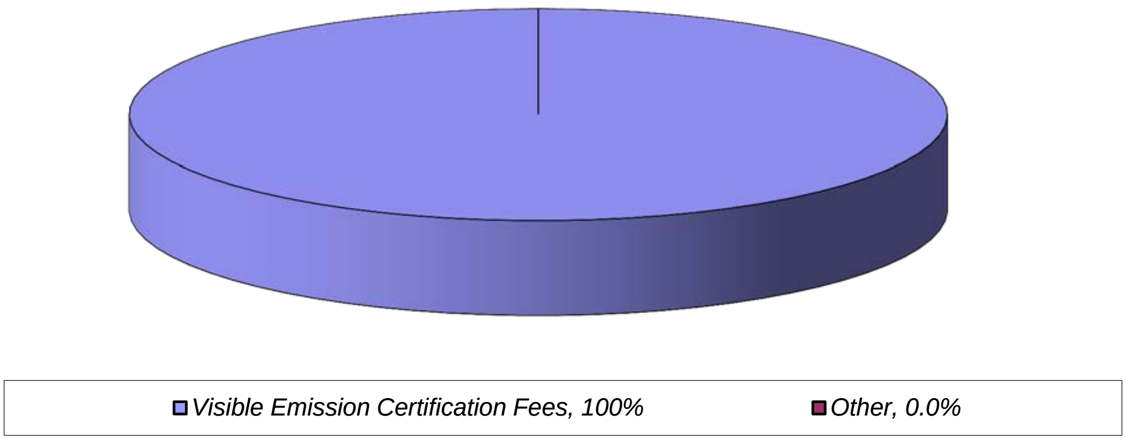



**Figure 7**

**ENTERPRISE OPERATIONS EXPENSES $23,380**

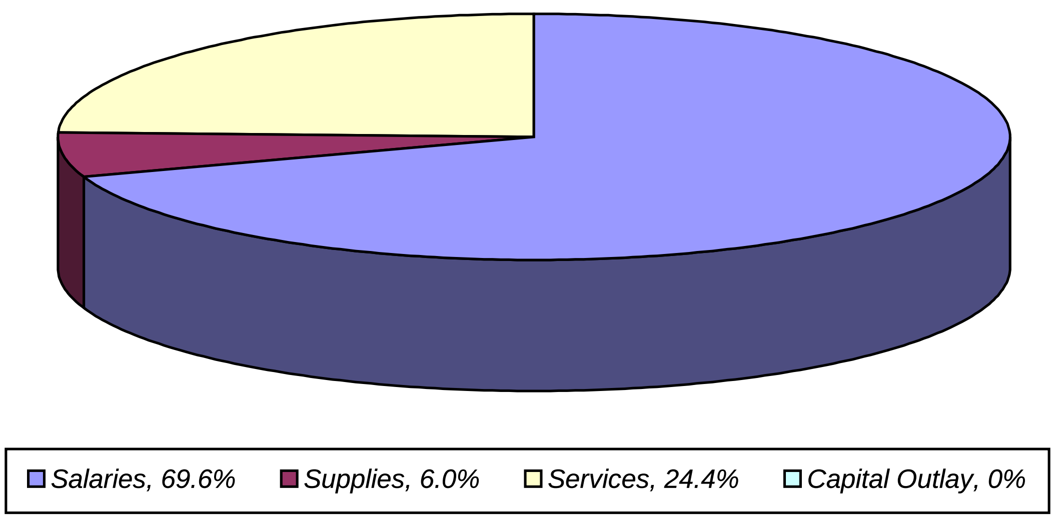



**Figure 8**

# FY 2019 Budget - Itemized by Account

## Base Operations Revenue Summary, Itemized by Account

### *Base Operations Accounts – Stationary Source Permit Fees*

*Account Number* 614-32190001 Minor Source Registration Fees

| | |
|---|---|
| *Projected FY 2018 Actual* | $175,237 |
| *Proposed FY 2019 Budget* | $162,000 |

This account reflects revenue received pursuant to the Revised Code of Washington (RCW) 70.94.151 and YRCAA Regulation 1. RCW 70.94.151, Washington Administrative Code (WAC) 173-400-099 and YRCAA Regulation 1, Section 4.01, require sources emitting air contaminants to register with YRCAA and pay initial and Annual Registration fees.

*Account Number* 614-32190008 Synthetic Minor Registration Fees

| | |
|---|---|
| *Projected FY 2018 Actual* | $18,620 |
| *Proposed FY 2019 Budget* | $19,950 |

This account reflects Annual Registration fees from Synthetic Minor Sources received pursuant to RCW 70.94.151 and YRCAA Regulation 1. Synthetic minor sources are sources that effectively opt out of being defined as a Major Source by accepting operating limitations and permit conditions limiting emission of air contaminants.

*Account Number* 614-32190006 Complex Minor Source Registration Fees

| | |
|---|---|
| *Projected FY 2018 Actual* | $23,130 |
| *Proposed FY 2019 Budget* | $20,300 |

Complex minor sources are minor sources which have complex processes with multiple emission points or significant emission potential.

*Account Number* 614-32290001 Title V Source Permit Fees

| | |
|---|---|
| *Projected FY 2018 Actual* | $101,625 |
| *Proposed FY 2019 Budget* | $122,500 |

This account reflects permit fee revenue received from the implementation of the YRCAA Title V Permit Program. Title V sources are major stationary sources of air pollution defined in 40 CFR Part 70 as stationary sources of air pollution that directly emit, or have the potential to emit, 100 tons per year (TPY) or more of any air pollutant.

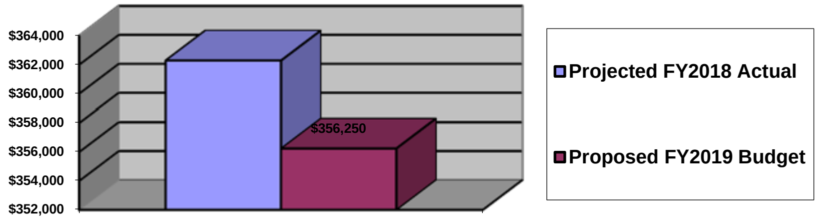
*Account Number* 614-32190002 New Source Review Fees

| | |
|---|---|
| *Projected FY 2018 Actual* | $43,678 |
| *Proposed FY 2019 Budget* | $31,500 |

This account reflects revenue received from permit evaluations for stationary sources subject to New Source Review (NSR) regulations. Sources subject to NSR regulations include sources regulated pursuant to WAC 173-400, WAC 173-460 and 40 CFR Part 60 and 40 CFR Part 61.

***Subtotal, Stationary Source Permit Fee Revenue***

| | |
|---|---|
| *Projected FY 2018 Actual* | $362,290 |
| *Proposed FY 2019 Budget* | $356,250 |




## *Base Operations Accounts – Burn Permit Fees*

*Account Number* 614-32290005 Residential Burn Permit Fees

| | |
|---|---|
| *Projected FY 2018 Actual* | $58,688 |
| *Proposed FY 2019 Budget* | $60,500 |

This account reflects revenue received from burn permit fees required by YRCAA, Regulation 1. Residential burning has been banned inside all Urban Growth Areas in YRCAA's jurisdiction.

*Account Number* 614-32290007 Agricultural Burn Permit Fees

| | |
|---|---|
| *Projected FY 2018 Actual* | $36,252 |
| *Proposed FY 2019 Budget* | $30,500 |

This account reflects revenue received from agricultural burn permit fees for permits issued pursuant to YRCAA Regulation, Section 3.03 and WAC 173-430.

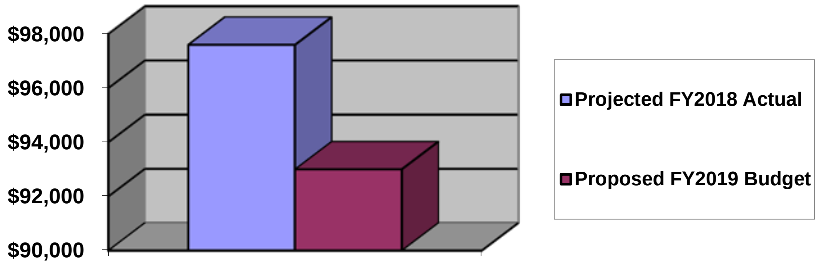
*Account Number* 614-32290011 Conditional Use Burn Permit Fees

| | |
|---|---|
| *Projected FY 2018 Actual* | $2,654 |
| *Proposed FY 2019 Budget* | $2,000 |

This account includes burn permit fees received for Conditional Use burn permits. Conditional Use burn permits are issued for burning that is not residential or agricultural burning including, but not limited to, training fires, land clearing burns, etc.

***Subtotal, Burn Permit Fee Revenue***

| | |
|---|---|
| *Projected FY 2018 Actual* | $97,594 |
| *Proposed FY 2019 Budget* | $93,000 |




## *Base Operations Accounts – Compliance Fees*

*Account Number* 614-32190005 Asbestos Removal Fees

| | |
|---|---|
| *Projected FY 2018 Actual* | $30,795 |
| *Proposed FY 2019 Budget* | $31,000 |

This account includes fees required pursuant to the NESHAP and YRCAA Regulation 1, Section 3.07 for processing notifications and conducting inspections of demolition and renovation activity with the potential to cause the release of asbestos. This program is a federal requirement that has been delegated to YRCAA.

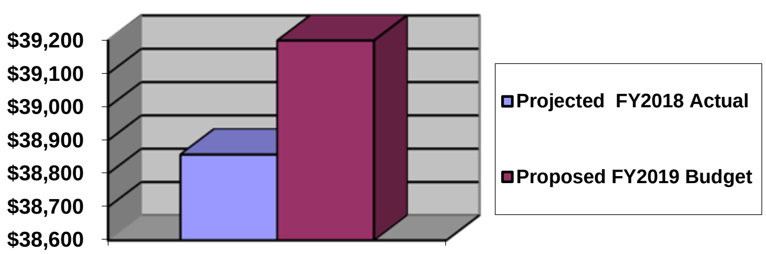
*Account Number* 614-32190009 Construction Dust Control Plan Fees

| | |
|---|---|
| *Projected FY 2018 Actual* | $8,063 |
| *Proposed FY 2019 Budget* | $8,200 |

This account includes revenue received for required construction dust mitigation plan evaluations, including Master or Site Plans required pursuant to YRCAA Regulation 1.

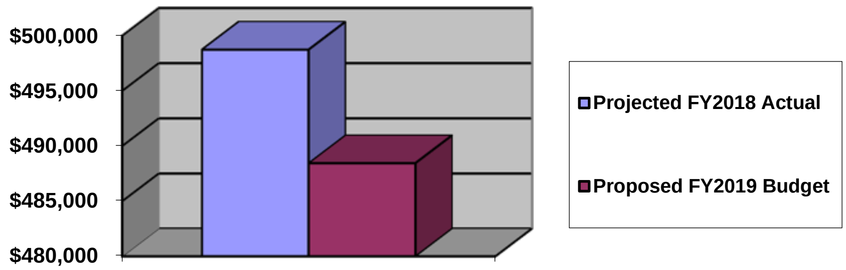
***Subtotal, Compliance Fees***

| | |
|---|---|
| *Projected FY 2018 Actual* | $38,858 |
| *Proposed FY 2019 Budget* | $39,200 |



***Subtotal, All Permit Fee Revenue***

| | |
|---|---|
| *Projected FY 2018 Actual* | $498,742 |
| *Proposed FY 2019 Budget* | $488,450 |




## ***Base Operations Accounts – Base Grants***

*Account Number* 614-33366001 EPA Core Grant

| | |
|---|---|
| *Projected FY 2018 Actual* | $111,067 |
| *Proposed FY 2019 Budget* | $107,395 |

This account reflects the federal share of federal performance partnership grants issued pursuant to FCAA, Section 105. The grant is issued to YRCAA by Washington State Department of Ecology passed through from USEPA. This federal-state grant is a two-year grant covering the period of FY 2017 and 2017, with an effective date of July 1, 2016. The grant provides partial funding for the YRCAA's seven basic air quality protection programs.

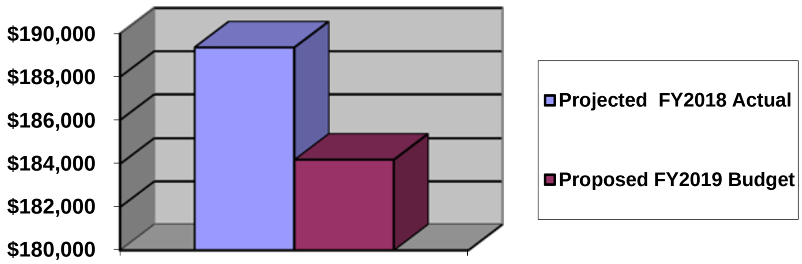
*Account Number* 614-33403101 DOE Core Grant

| | |
|---|---|
| *Projected FY 2018 Actual* | $78,301 |
| *Proposed FY 2019 Budget* | $76,800 |

This account includes the state share of the federal performance partnership grant issued pursuant to FCAA Section 105.

***Subtotal, Base grants***

| | |
|---|---|
| *Projected FY 2018 Actual* | $189,368 |
| *Proposed FY 2019 Budget* | $184,195 |




## *Base Operations Accounts - Fines & Penalties*

*Account Number* 614-35990001 Civil Penalties

| | |
|---|---|
| *Projected FY 2018 Actual* | $33,154 |
| *Proposed FY 2019 Budget* | $2,500 |

This account reflects civil penalties assessed for specific infractions of Air Pollution Regulations. Civil penalty amounts vary based on the type and severity of the specific violation, culpability of the source in violating regulations, and the potential risk to human health. In order to prevent any potential interpretation that the Agency's enforcement program is, in part, a 'quota' program, YRCAA budgets minimal civil penalty revenue.

## *Base Operations Accounts - Supplemental Income*

*Account Number* 614-33831001 Supplemental Income

| | |
|---|---|
| *Projected FY 2018 Actual* | $100,259 |
| *Proposed FY 2019 Budget* | $100,789 |

This account includes Supplemental Income. Supplemental Income is the specific income term used to describe required assessments paid to YRCAA by component cities, towns and the County of Yakima, pursuant to RCW 70.94.092 and 70.94.093. RCW 70.94.092 states, in part, "The budget shall contain an estimate of all revenues to be collected during the following budget year, including any surplus funds remaining unexpended from the preceding year. The remaining funds required to meet budget expenditures, if any, shall be designated as "supplemental income" and shall be obtained from the component cities, towns, and counties in the manner provided in this chapter." The proportionate shares of supplemental income for calendar year 2017 are as shown in Appendix E.

## *Base Operations Accounts - Other Income*

*Account Number* 614-36111001 Interest

| | |
|---|---|
| *Projected FY 2018 Actual* | $4,867 |
| *Proposed FY 2019 Budget* | $2,100 |

This account includes the estimated interest earned from YRCAA funds on hand.

*Account Number* 614-36990013 Miscellaneous Income

| | |
|---|---|
| *Projected FY 2018 Actual* | $1,143 |
| *Proposed FY 2019 Budget* | $200 |

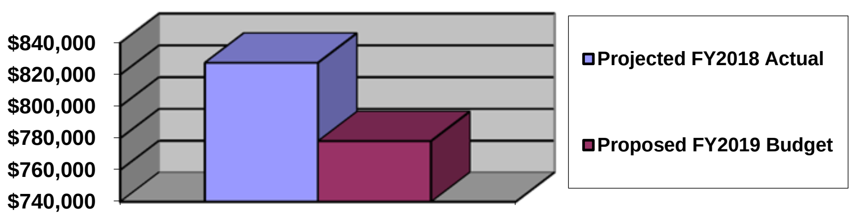
This account includes all other revenue not reflected in other accounts herein and otherwise classified as miscellaneous income.

***Subtotal, Other Income***

| | |
|---|---|
| *Projected FY 2018 Actual* | $6,010 |
| *Proposed FY 2019 Budget* | $2,300 |

***Total, Base Operations Revenue***

| | |
|---|---|
| *Projected FY 2018 Actual* | $827,533 |
| *Proposed FY 2019 Budget* | $778,234 |




## Grant Operations Revenue Summary, Itemized by Account

### *Grant Operations Accounts*

*Account Number* 614-33403105 DOE Wood Stove Education Grant

| | |
|---|---|
| *Projected FY 2018 Actual* | $5,331 |
| *Proposed FY 2019 Budget* | $5,331 |

This account includes special grant funding provided by the Washington State Department of Ecology (DOE) supporting YRCAA's wood stove education and enforcement programs. Under this program, YRCAA funds partial costs for residential woodstove replacements where older high-polluting wood burning stoves are replaced with new EPA-certified, less polluting wood stoves or other heating devices.

*Account Number* 614-33403108 DOE PM 2.5 Grant

| | |
|---|---|
| *Projected FY 2018 Actual* | $ 21,050 |
| *Proposed FY 2019 Budget* | $ 21,050 |

This account reflects compensation from DOE for the costs of operation and maintenance of one Federal Reference Monitor, one Federal Equivalency Monitor and two Chemical Speciation monitors measuring particulate matter (PM) equal to or smaller than 2.5 microns ($PM_{2.5}$).

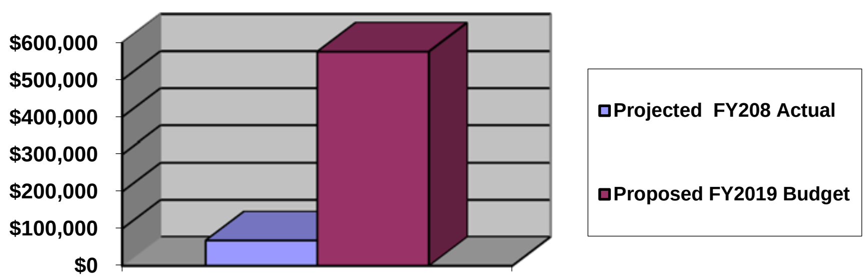
*Account Number* 614-33403107 Wood Stove Change-Out Grant

| | |
|---|---|
| *Projected FY 2018 Actual* | $42,164 |
| *Proposed FY 2019 Budget* | $550,000 |

This account includes grant funding provided by the Washington State Department of Ecology for YRCAA's wood stove change-out program. Under this program, YRCAA funds costs for residential woodstove replacements where older polluting wood burning stoves are replaced with new EPA-certified, less polluting wood stoves or other heating devices. The program has operated with numerous other contributing partners.

***Total, Grant Operations Revenue***

| | |
|---|---|
| *Projected FY 2018 Actual* | $68,545 |
| *Proposed FY 2019 Budget* | $576,381 |




## Enterprise Operations Revenue Summary, Itemized by Account

### *Enterprise Operations Accounts*

*Account Number* 614-34317001 VE Certification Fees

| | |
|---|---|
| *Projected FY 2018 Actual* | $90,025 |
| *Proposed FY 2019 Budget* | $80,000 |

Enterprise Operations revenues include primarily training and registration fees for individuals participating in the YRCAA's Northwest Opacity Certification (NOC) enterprise. NOC provides training, testing and certification for participants who must be certified to conduct visible emission evaluations (VEE) per Method 9 and 22 contained in 40 CFR 60, Appendix A.

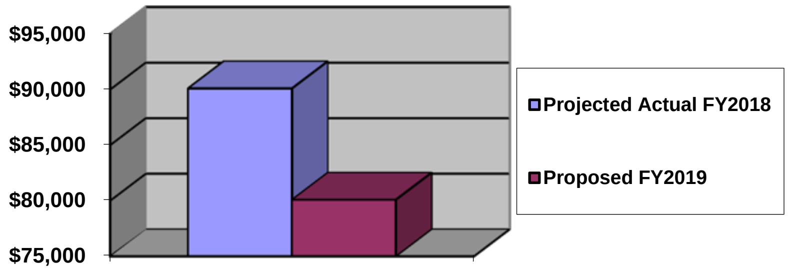
*Account Number:* 614-34317002 Other Enterprise Revenue

| | |
|---|---|
| *Projected FY 2018 Actual* | $75 |
| *Proposed FY 2019 Budget* | $100 |

This account is maintained in the event any opportunity for other enterprise revenue arises.

***Subtotal, Enterprise Revenue***

| | |
|---|---|
| *Projected FY 2018 Actual* | $90,100 |
| *Proposed FY 2019 Budget* | $80,100 |




## *Total Estimated YRCAA Revenue*

| | FY 2018 | FY 2019 |
|---|---|---|
| *Estimated Base Operations YRCAA Revenue* | $ 827,533 | $ 778,234 |
| *Estimated Grants Revenue* | $ 68,545 | $ 576,381 |
| *Estimated Enterprise Revenue* | $ 90,100 | $ 80,100 |
| *Prior Year Carry Over* | $ 125,000 | $ 125,000 |
| *Total Revenue* | **$ 1,111,178** | **$ 1,434,715** |

## Base Operations Expenditure Summary, Itemized by Account

### *Base Operations – Salaries and Benefits*

*Account Number* 614-1001 Salaries

| | |
|---|---|
| *Projected FY 2018 Actual* | $498,118 |
| *Proposed FY 2019 Budget* | $439,161 |

The Salaries account reflects the base wage costs for all full time and part time employees.

*Account Number* 614-2002 Benefits

| | |
|---|---|
| *Projected FY 2018 Actual* | $175,014 |
| *Proposed FY 2019 Budget* | $166,245 |

Benefits include employer contributions to employee healthcare costs to the Public Employees Retirement System (PERS) and industrial insurance.

***Subtotal, Salaries and Benefits***

| | |
|---|---|
| *Projected FY 2018 Actual* | $673,132 |
| *Proposed FY 2019 Budget* | $668,503 |

## *Base Operations – Supplies*

*Account Number* 614-3101 Office Supplies

| | |
|---|---|
| *Projected FY 2018 Actual* | $4,889 |
| *Proposed FY 2019 Budget* | $6,500 |

This office supply account includes all disposable supplies and non-disposable supplies in value up to $ 4,999 and which are not charged to the fixed asset account.

*Account Number* 614-3102 Safety Equipment

| | |
|---|---|
| *Projected FY 2018 Actual* | $ 0 |
| *Proposed FY 2019 Budget* | $500 |

*Account Number* 614-3201 Vehicles, Gasoline

| | |
|---|---|
| *Projected FY 2018 Actual* | $1,658 |
| *Proposed FY 2019 Budget* | $2,500 |

This account was established to allow tracking of YRCAA vehicle fuel costs.

*Account Number* 614-3501 Small Tools / Equipment

| | |
|---|---|
| *Projected FY 2018 Actual* | $ 0 |
| *Proposed FY 2019 Budget* | $200 |

This account tracks the costs of small tools and equipment not otherwise debited to other accounts.

*Account Number* 614-3502 Computer Network

| | |
|---|---|
| *Projected FY 2018 Actual* | $11,112 |
| *Proposed FY 2019 Budget* | $4,000 |

This account tracks computer hardware and software user license costs.

***Subtotal, Base Operation Supplies***

| | |
|---|---|
| *Projected FY 2018 Actual* | $17,659 |
| *Proposed FY 2019 Budget* | $13,700 |

## *Base Operations – Services*

*Account Number* 614-4101 Professional Services

| | |
|---|---|
| *Projected FY 2018 Actual* | $34,953 |
| *Proposed FY 2019 Budget* | $35,000 |

This account reflects the costs of most professional and specialized services. Specifically, the FY 2019 account includes the following: legal services, technical services, computer network security and hosted email services and other miscellaneous professional services.

*Account Number* 614-4101 Laboratory Analyses

| | |
|---|---|
| *Projected FY 2018 Actual* | $61 |
| *Proposed FY 2019 Budget* | $200 |

This account tracks laboratory analysis costs of air and bulk asbestos samples.

*Account Number* 614-4125 Yakima County Services

| | |
|---|---|
| *Projected FY 2018 Actual* | $770 |
| *Proposed FY 2019 Budget* | $1,014 |

This account reflects the costs of utilizing Yakima County financial services.

*Account Number* 614-4201 Communications, Phones/Internet

| | |
|---|---|
| *Projected FY 2018 Actual* | $12,227 |
| *Proposed FY 2019 Budget* | $12,800 |

This account reflects the cost of communications services, including monthly telephone and internet costs.

*Account Number* 614-4202 Postage

| | |
|---|---|
| *Projected FY 2018 Actual* | $1,838 |
| *Proposed FY 2019 Budget* | $3,500 |

This account includes the costs of individual stamps, postage, parcel post, and express mail.

*Account Number* 614-4301 Travel & Transportation

| | |
|---|---|
| *Projected FY 2018 Actual* | $3,698 |
| *Proposed FY 2019 Budget* | $3,200 |

This account reflects the costs of all transportation of persons and things, including the travel costs of meals and lodging, commercial transportation, allowance for use of private vehicles and other travel costs, except where the cost of travel is more appropriately included as part of a charge in another account.

*Account Number* 614-4401 Public Education

| | |
|---|---|
| *Projected FY 2018 Actual* | $2,868 |
| *Proposed FY 2019 Budget* | $4,000 |

The YRCAA public education program is mandated and the funding is primarily derived directly from EPA-DOE Grants and Penalties. This account tracks expenses related to that function.

*Account Number* 614-4401 Publications, Legal Notices

| | |
|---|---|
| *Projected FY 2018 Actual* | $3,099 |
| *Proposed FY 2019 Budget* | $2,000 |

This account reflects YRCAA costs of publications legally required for reports and notices. The account includes costs of public notices of Board and Administrative meetings and notice of public hearings to adopt rules and regulations or take other action requiring a public notice.

*Account Number* 614-4501 Rents & Leases, Equipment

| | |
|---|---|
| *Projected FY 2018 Actual* | $3,282 |
| *Proposed FY 2019 Budget* | $3,282 |

This account reflects the rent and lease of equipment primarily for office use. The FY 2019 account will include rental cost for the postage machine, the copier and other office equipment.

*Account Number* 614-4501 Rents & Leases, Space

| | |
|---|---|
| *Projected FY 2018 Actual* | $43,659 |
| *Proposed FY 2019 Budget* | $52,659 |

This account includes office and other space lease costs. Presently, the YRCAA leases 2500 SF of base office space and an additional 800 SF of shared storage, lunch room and restrooms.

*Account Number* 614-4601 Insurance

| | |
|---|---|
| *Projected FY 2018 Actual* | $12,555 |
| *Proposed FY 2019 Budget* | $12,600 |

This account includes premiums for public liability, property damage including fire, burglary, and vehicle coverage, errors and omissions coverage, and money insurance coverage.

*Account Number* 614-4801 Maintenance, Motor Vehicles

| | |
|---|---|
| *Projected FY 2018 Actual* | $2,316 |
| *Proposed FY 2019 Budget* | $2,400 |

This account reflects agency vehicle repair costs.  Vehicle repair costs set the foundation for identifying potential cost savings related to vehicle replacement.

*Account Number* 614-4801 Maintenance, Equipment

| | |
|---|---|
| *Projected FY 2018 Actual* | $1,926 |
| *Proposed FY 2019 Budget* | $2,000 |

This account reflects maintenance activity for equipment not specified in other maintenance accounts, for example, repair of office furnishings, and maintenance of copy machines.

*Account Number* 614-4801 Maintenance, Computers

| | |
|---|---|
| *Projected FY 2018 Actual* | $ 0 |
| *Proposed FY 2019 Budget* | $250 |

This account includes general maintenance costs for YRCAA computers and network. The vast majority of work is now done in-house by the Information Technology Manager.

*Account Number* 614-4801 Maintenance, Building

| | |
|---|---|
| *Projected FY 2018 Actual* | $1,931 |
| *Proposed FY 2019 Budget* | $1,500 |

This account reflects costs for general mechanical, electrical, janitorial, garbage pick-up, and general maintenance services.

*Account Number* 614-4901 Memberships

| | |
|---|---|
| *Projected FY 2018 Actual* | $855 |
| *Proposed FY 2019 Budget* | $920 |

This account tracks YRCAA costs of memberships in societies, associations of officials, trade and other organizations whose membership may meet and discuss issues related to the useful conduct of the YRCAA business.

*Account Number* 614-4901 Training

| | |
|---|---|
| *Projected FY 2018 Actual* | $2,469 |
| *Proposed FY 2019 Budget* | $2,500 |

This account tracks YRCAA employee education and training costs.

*Account Number* 614-4901 Service Charges and Interest

| | |
|---|---|
| *Projected FY 2018 Actual* | $5,113 |
| *Proposed FY 2019 Budget* | $5,000 |

This account reflects charges on accounts payable and service charges such as customer credit card and online payment.

*Account Number* 614-4901 Miscellaneous Services

| | |
|---|---|
| *Projected FY 2018 Actual* | $900 |
| *Proposed FY 2019 Budget* | $6,750 |

This account reflects specialized services, generally particular to the conduct of the YRCAA operations, such as the Woodstove Rebate Program, and for which an account has not otherwise been established.

*Account Number* 614-4901 Ecology Oversight Fees

| | |
|---|---|
| *Projected FY 2018 Actual* | $3,840 |
| *Proposed FY 2019 Budget* | $4,787 |

This account reflects fees paid to Department of Ecology for maintaining oversight of the agency Title V Air Operating Permit Program.

***Subtotal, Base Operations Services***

| | |
|---|---|
| *Projected FY 2018 Actual* | $138,360 |
| *Proposed FY 2019 Budget* | $156,362 |

## *Base Operations – Fixed Assets*

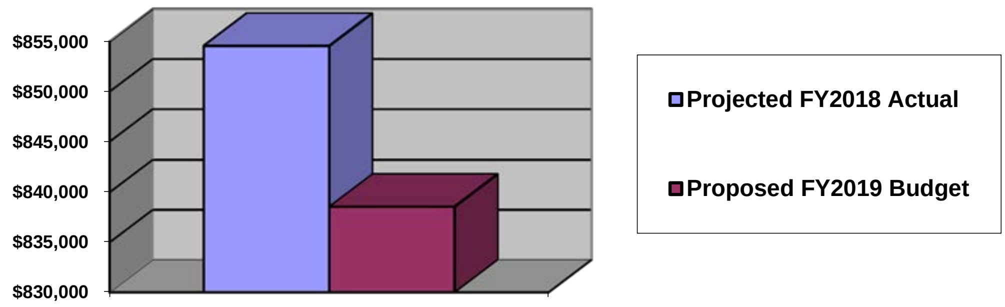
*Account Number* 614-6401 Capital Outlay, Fixed Assets

| | |
|---|---|
| *Projected FY 2018 Actual* | $25,416 |
| *Proposed FY 2019 Budget* | $ 0 |

Capital fixed assets are those items of tangible property that are non-consumable, of $5,000 value or more, and that have a useful life of at least two (2) years. These assets are depreciated over the useful life of the asset.

***Total, Base Operations Expenditure***

| | |
|---|---|
| *Projected FY 2018 Actual* | $854,567 |
| *Proposed FY 2019 Budget* | $775,468 |




## Grants Operations Expenditure Summary, Itemized by Account

### *Wood Stove Education Grant*

*Wood Stove Education Grant Salaries*

*Account Number* 614-1001 Salaries

| | |
|---|---|
| *Projected FY 2018 Actual* | $3,956 |
| *Proposed FY 2019 Budget* | $3,867 |

The Salaries account reflects the base wage costs for all full time and part time employees

*Account Number* 614-2002 Benefits

| | |
|---|---|
| *Projected FY 2018 Actual* | $1,462 |
| *Proposed FY 2019 Budget* | $1,464 |

Benefits include employer contributions to employee healthcare costs, to the Public Employees Retirement System (PERS) and industrial insurance.

*Wood Stove Education Grant Supplies*

*Account Number* 614-3101 Office Supplies

| | |
|---|---|
| *Projected FY 2018 Actual* | $ 0 |
| *Proposed FY 2019 Budget* | $ 0 |

This office supply account includes all disposable supplies and non-disposable supplies in value up to $ 4,999 and which are not charged to the fixed asset account.

*Wood Stove Education Grant Services*

*Account Number* 614-4139 Professional Services

| | |
|---|---|
| *Projected FY 2018 Actual* | $120 |
| *Proposed FY 2019 Budget* | $120 |

This account reflects the costs of most professional and specialized services.

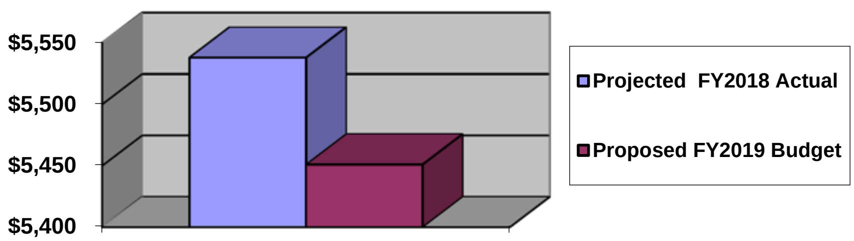
*Account Number* 614-4202 Postage

| | |
|---|---|
| *Projected FY 2018 Actual* | $ 0 |
| *Proposed FY 2019 Budget* | $ 0 |

This account includes the costs of individual stamps, postage, parcel post, and express mail.

***Subtotal, Woodstove Education Grant Expenditures***

| | |
|---|---|
| *Projected FY 2018 Actual* | $5,538 |
| *Proposed FY 2019 Budget* | $5,451 |




## *PM$_{2.5}$ Grant*

*PM$_{2.5}$ Grant Salaries*

*Account Number* 614-1001 Salaries

| | |
|---|---|
| *Projected FY 2018 Actual* | $15,367 |
| *Proposed FY 2019 Budget* | $15,270 |

The Salaries account reflects the base wage costs for all full time and part time employees.

*Account Number* 614-2002 Benefits

| | |
|---|---|
| *Projected FY 2018 Actual* | $5,683 |
| *Proposed FY 2019 Budget* | $5,780 |

Benefits include employer contributions to employee healthcare costs to the Public Employees Retirement System (PERS) and industrial insurance.

*PM$_{2.5}$ Grant Supplies*

*Account Number* 614-3101 Office Supplies

| | |
|---|---|
| *Projected FY 2018 Actual* | $ 0 |
| *Proposed FY 2019 Budget* | $ 0 |

This office supply account includes all disposable supplies and non-disposable supplies in value up to $ 4,999 and which are not charged to the fixed asset account.

*PM$_{2.5}$ Grant Services*

*Account Number* 614-4101 Professional Services

| | |
|---|---|
| *Projected FY 2018 Actual* | $ 0 |
| *Proposed FY 2019 Budget* | $ 0 |

This account reflects the costs of most professional and specialized services

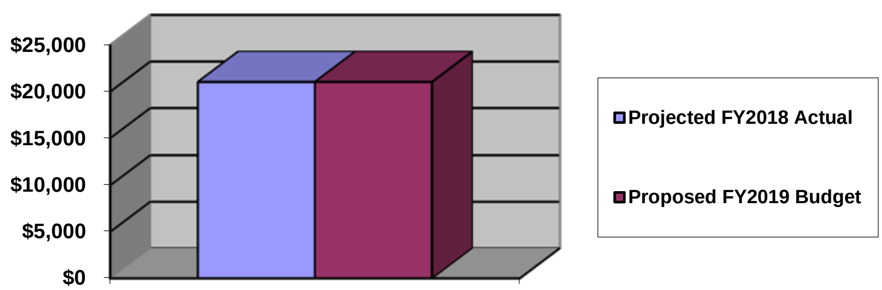
*Account Number* 614-6401 Capital Outlay, Fixed Assets

| | |
|---|---|
| *Projected FY 2018 Actual* | $ 0 |
| *Proposed FY 2019 Budget* | $ 0 |

Capital fixed assets are those items of tangible property that are non-consumable, of $5,000 value or more, and that have a useful life of at least two (2) years. These assets are depreciated over the useful life of the asset.

***Subtotal, PM$_{2.5}$ Grant Expenditures***

| | |
|---|---|
| *Projected FY 2018 Actual* | $ 21,050 |
| *Proposed FY 2019 Budget* | $ 21,050 |




## *Wood Stove Change-out Grant*

*Wood Stove Change-out Grant Salaries*

*Account Number* 614-1001 Salaries

| | |
|---|---|
| *Projected FY 2018 Actual* | $936 |
| *Proposed FY 2018 Budget* | $59,845 |

The Salaries account reflects the base wage costs for all full time and part time employees.

*Account Number* 614-2002 Benefits

| | |
|---|---|
| *Projected FY 2018 Actual* | $329 |
| *Proposed FY 2019 Budget* | $22,655 |

Benefits include employer contributions to employee healthcare costs to the Public Employees Retirement System (PERS) and industrial insurance.

*Wood Stove Change-out Grant Supplies*

*Account Number* 614-3101 Office Supplies

| | |
|---|---|
| *Projected FY 2018 Actual* | $43 |
| *Proposed FY 2019 Budget* | $50 |

This office supply account includes all disposable supplies and non-disposable supplies in value up to $ 4,999 and which are not charged to the fixed asset account.

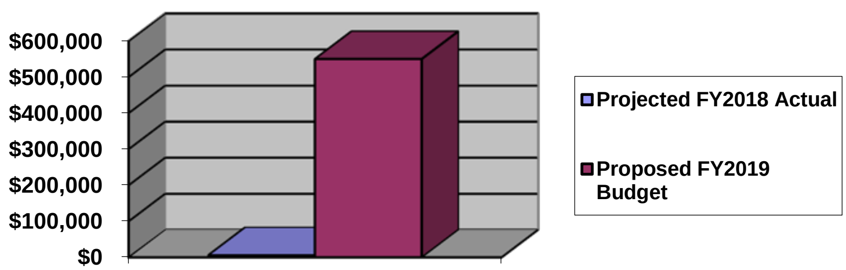
*Account Number* 614-4101 Professional Services

| | |
|---|---|
| *Projected FY 2018 Actual* | $4,620 |
| *Proposed FY 2019 Budget* | $467,500 |

This account reflects the costs of most professional and specialized services, including removal of old high-polluting wood stoves and purchase and installation of cleaner burning devices.

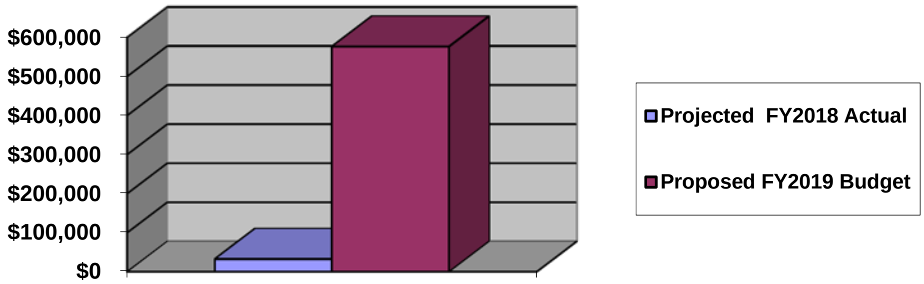
***Subtotal, Wood Stove Change-out Grant Expenditures***

| | |
|---|---|
| *Projected FY 2018 Actual* | $5,928 |
| *Proposed FY 2019 Budget* | $550,050 |



***Total, Grant Operations Expenditures***

| | |
|---|---|
| *Projected FY 2018 Actual* | $32,516 |
| *Proposed FY 2019 Budget* | $576,551 |




## Enterprise Operations Expenditure Summary, Itemized by Account

### *Enterprise Operations – Salaries and Benefits*

*Account Number* 141-1001 Salaries

| | |
|---|---|
| *Projected FY 2018 Actual* | $16,125 |
| *Proposed FY 2019 Budget* | $11,810 |

The Salaries account reflects the base wage costs for all full time and part time employees.

*Account Number* 141-2002 Benefits

| | |
|---|---|
| *Projected FY 2018 Actual* | $5,217 |
| *Proposed FY 2019 Budget* | $4,470 |

Benefits include employer contributions to employee healthcare costs to the Public Employees Retirement System (PERS) and industrial insurance.

***Subtotal, Salaries, Benefits***

| | |
|---|---|
| *Projected FY 2018 Actual* | $21,342 |
| *Proposed FY 2019 Budget* | $16,280 |

### *Enterprise Operations - Supplies*

*Account Number* 141-3101 Office Supplies

| | |
|---|---|
| *Projected FY 2018 Actual* | $108 |
| *Proposed FY 2019 Budget* | $200 |

This office supply account includes all Enterprise disposable supplies and non-disposable supplies in value up to $ 4,999 and which are not charged to the fixed asset account.

*Account Number* 141-3201 Vehicles, Gasoline

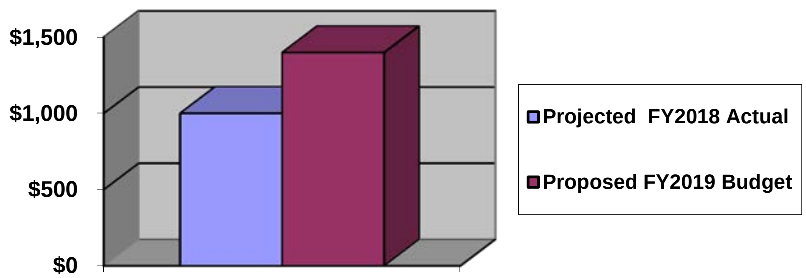
| | |
|---|---|
| *Projected FY 2018 Actual* | $693 |
| *Proposed FY 2019 Budget* | $1,000 |

*Account Number* 141-3501 Small Tools / Equipment

| | |
|---|---|
| *Projected FY 2018 Actual* | $200 |
| *Proposed FY 2019 Budget* | $200 |

***Subtotal, Supplies***

| | |
|---|---|
| *Projected FY 2018 Actual* | $1,001 |
| *Proposed FY 2019 Budget* | $1,400 |




## *Enterprise Operations - Services*

*Account Number* 141-4101 Professional Services

| | |
|---|---|
| *Projected FY 2018 Actual* | $ 0 |
| *Proposed FY 2019 Budget* | $ 0 |

This account reflects the costs of most professional services and specialized services.

*Account Number* 141-4202 Postage

| | |
|---|---|
| *Projected FY 2018 Actual* | $ 0 |
| *Proposed FY 2019 Budget* | $ 0 |

*Account Number* 141-4301 Travel & Transportation

| | |
|---|---|
| *Projected FY 2018 Actual* | $2,021 |
| *Proposed FY 2019 Budget* | $3,000 |

This account reflects the costs of all transportation of persons and things, including the costs of meals and lodging, commercial transportation, and other travel costs.

*Account Number* 141-4502 Rents & Leases, Space

| | |
|---|---|
| *Projected FY 2018 Actual* | $1,147 |
| *Proposed FY 2019 Budget* | $2,000 |

This account includes the costs for acquiring facilities used for conducting the training and testing provided by NOC and other enterprise activities.

*Account Number* 114-4801 Maintenance, Motor Vehicles

| | |
|---|---|
| *Projected FY 2018 Actual* | $ 0 |
| *Proposed FY 2019 Budget* | $200 |

This account tracks vehicle repair and maintenance costs. Vehicle repair costs set the foundation for identifying potential cost savings related to vehicle replacement.

*Account Number* 141-4801 Maintenance, Equipment

| | |
|---|---|
| *Projected FY 2018 Actual* | $ 0 |
| *Proposed FY 2018 Budget* | $500 |

This account reflects maintenance activity for equipment not specified in other maintenance accounts.

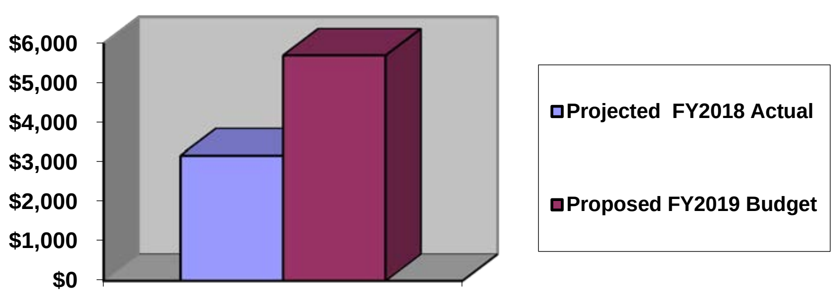
*Account Number* 141-4901 Miscellaneous Services

| | |
|---|---|
| *Projected FY 2018 Actual* | $ 0 |
| *Proposed FY 2019 Budget* | $ 0 |

This account reflects comparatively specialized supplies and services, generally particular to the conduct of the NOC operations, and for which an account has not otherwise been established.

***Subtotal, Services***

| | |
|---|---|
| *Projected FY 2018 Actual* | $3,168 |
| *Proposed FY 2019 Budget* | $5,700 |



## *Enterprise Operations - Fixed Assets*

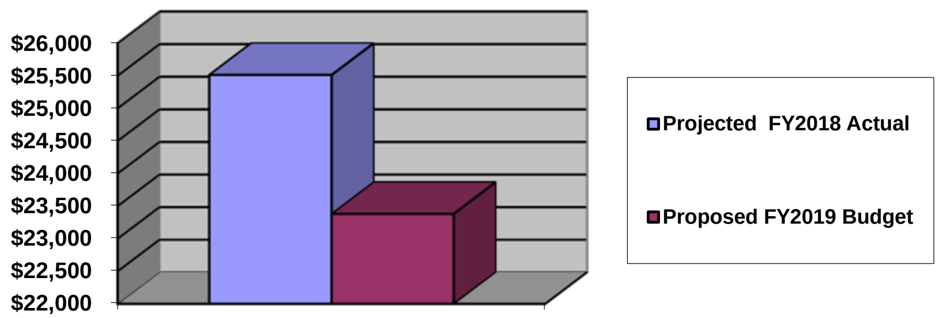
*Account Number* 141-4500 Capital Outlay, Fixed Assets

| | |
|---|---|
| *Projected FY 2018 Actual* | $ 0 |
| *Proposed FY 2019 Budget* | $ 0 |

Capital fixed assets are those items of tangible property that are non-consumable, of $5,000 value or more, and that have a useful life of at least two (2) years.

***Subtotal, Enterprise Operations Expenditures***

| | |
|---|---|
| *Projected FY 2018 Actual* | $25,511 |
| *Proposed FY 2019 Budget* | $23,380 |




## *Total Estimated YRCAA Expenditures*

| | FY 2018 | FY 2019 |
|---|---|---|
| *Estimated Base Operations Expenditure* | $ 854,567 | $ 775,468 |
| *Estimated Grants Expenditure* | $ 32,516 | $ 576,551 |
| *Estimated Enterprise Expenditure* | $ 25,511 | $ 23,380 |
| *Total Expenditure* | **$ 912,594** | **$ 1,375,399** |

# *RESOLUTIONS FOR IMPLEMENTING THE BUDGET*

Resolution No. 2018-07, Adopting the Revised FY 2019 Budget

# RESOLUTION NO.: 2018-07
# BEFORE THE GOVERNING BOARD OF THE
# YAKIMA REGIONAL CLEAN AIR AGENCY (YRCAA)

Revising the Agency Fiscal Year (FY) 2019 Budget ……………………)

WHEREAS, the YRCAA Governing Board of Directors (Board) adopted the Proposed FY 2019 Budget in the amount of $1,141,715 on June 14, 2018; and

WHEREAS, substantial additional grant revenue of $550,000 was awarded to the agency after adoption of the FY 2019 Budget; and

WHEREAS, the Board held a Public Hearing on August 9, 2018 to consider adopting the Proposed Revisions to the FY 2019 Budget;

WHEREAS, the YRCAA provided the public with a 30-day opportunity to comment on the proposed revisions to the adopted FY 2019 budget from July 1st, 2018, through July 31st, 2018; and

NOW THERFORE BE IT RESOLVED, the Board hereby adopts the Revised FY 2019 Budget in the amount of $1,559,715; and

BE IT FURTHER RESOLVED, the YRCAA Executive Director shall implement said budget according to the FY 2019 Budget Work Plan and Appendix D, "FY 2019 YRCAA Resource Allocation Summary."

On motion of ___________________, seconded by ___________________, the foregoing resolution is hereby PASSED AND ADOPTED by the Yakima Regional Clean Air Agency Board of Directors on this 9th day of August, 2018.

| | |
|---|---|
| ______________________________ | ______________________________ |
| Jon DeVaney, Chair | Ron Anderson, Director |
| ______________________________ | ______________________________ |
| Steven Jones, Director | Carmen Mendez, Director |
| ______________________________ | ______________________________ |
| Norm Childress, Director | Mary Wurtz, Clerk of the Board |

# Appendices

Appendix D: Revised FY 2019 YRCAA Resource Allocation Summary

# Appendix D

## Revised FY 2019 YRCAA Resource Allocation

### *Salaries by Work Program*

| Staff | *Rate | Permit | Non-per | Permit | Pub Ed | Planning | Asst | Admin | Title V | Enterprise | Monitor | WS | Leave | Hr Total | $ Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hurley | $ 55.75 | 480 | 325 | 280 | | 220 | 22 | 148 | 240 | | | | 365 | 2080 | $ 115,960 |
| Tahat | $ 49.76 | 100 | | 800 | | 70 | | | 750 | | | | 360 | 2080 | $ 103,501 |
| | $ - | | | | | | | | | | | | | | $ - |
| Porter | $ 24.36 | 605 | | 744 | | 425 | | | 206 | | | | 100 | 2080 | $ 50,669 |
| Sanford | $ 25.52 | 620 | 723 | | | | | | | | 673 | | 64 | 2080 | $ 53,082 |
| | $ - | | | | | | | | | | | | | | $ - |
| Brookshire | $ 18.76 | 280 | 280 | 230 | 198 | | | 350 | 181 | 225 | | | 336 | 2080 | $ 39,021 |
| Wurtz | $ 30.14 | 283 | 329 | 253 | 191 | 127 | 45 | 433 | 323 | | | | 96 | 2080 | $ 62,691 |
| Gonzalez | $ 24.09 | 892 | 362 | 325 | 60 | 57 | 25 | 109 | 100 | | | | 150 | 2080 | $ 50,107 |
| Owen | $ 31.14 | | | 190 | 140 | | 120 | 585 | 180 | 123 | 34 | 503 | 205 | 2080 | $ 64,771 |
| Blanchard | $ 26.92 | | | | 200 | | 200 | 100 | | | | 1430 | 150 | 2080 | $ 55,994 |
| Harrington | $ 30.49 | 925 | 521 | 25 | | | | | 366 | | 93 | | 150 | 2080 | $ 63,419 |
| Edler | $ 34.31 | | 100 | 100 | 240 | | 128 | 347 | | 240 | | 691 | 234 | 2080 | $ 71,365 |
| | Hr Totals | 4,185 | 2,640 | 2,947 | 1,029 | 899 | 540 | 2,072 | 2,346 | 588 | 800 | 2,624 | 2,210 | 22880 | **$ 730,567** |
| | | | | | | | | | | | | | | | |
| | Cost | $ 125,770 | $ 79,775 | $ 103,421 | $ 28,895 | $ 31,302 | $ 16,698 | $ 63,308 | $ 88,022 | $ 16,286 | $ 21,050 | $ 77,867 | $ 78,166 | | **$ 730,567** |
| Revenue Available | | $ 125,771 | $ 79,776 | $ 103,422 | $ 28,896 | $ 31,303 | $ 16,699 | $ 63,309 | $ 88,022 | $ 16,287 | $ 21,050 | $ 77,867 | $ 78,166 | | **$ 730,567** |
| % of Available | | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | | **100.0%** |

*Rate = hourly wage + benefits average for the year

| **Revenue Source** | | **Estimated Revenue** | **Available For Salary** | **Allocation Planning Formula** |
|---|---|---|---|---|
| Title V Fees | 13.4% | $ 122,500 | $ 97,804 | 100% Title V after Audit & DOE Oversight Fees |
| Permit Fees (except T-V) | 31.7% | $ 365,950 | $ 231,570 | 50% Compl Per; 50% Permit |
| Base Grants | 15.7% | $ 184,195 | $ 114,831 | 33% Compl Non-per; 33% Pub Ed; 10% Planning; 10% Bus Asst; 10% Admin; 4% Monitor |
| Penalty | 0.0% | $ 2,500 | | |
| Supplemental Income | 9.7% | $ 100,780 | $ 70,546 | 10% Planning; 40% Admin; 35% Compl Non-per; 15% Pub Ed |
| Enterprise | 2.2% | $ 80,100 | $ 16,280 | 100% Enterprise |
| **Grants:** | | | | |
| PM2.5 | 2.9% | $ 21,050 | $ 21,050 | 100% Monitor |
| WSE | 0.7% | $ 5,331 | $ 5,331 | |
| WSCO | 11.1% | $ 550,000 | $ 80,850 | 100% WS |
| **Other** | 0.3% | $ 2,300 | $ 2,300 | 15% Admin; 85% Compl Non-per |
| **Fund Balance** | 12.3% | $ 125,000 | $ 90,000 | 47% Compl Non-per; 5% Pub Ed; 15% Planning; 33% Admin |
| | 100.0% | **$ 1,559,715** | **$ 730,567** | |

# FY 2019 YRCAA Resource Allocation

*All Costs by Division and Operation*

| Operation | Base Operations | | | Grant Operations | | | Enterprise Operations | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Division** | Admin. | Engineering | Compliance | Admin. | Engineering | Compliance | Admin. | Engineering | Compliance | |
| **Costs** | $ 217,946 | $181,622 | $205,838 | $ 87,831 | $ - | $ 21,050 | $ 16,280 | $ - | $ - | **Total** |
| | | **Subotal** | **$605,406** | | **Subotal** | **$108,881** | | **Subotal** | **$ 16,280** | **$730,567** |
| | | | 9.12 | FTE | | 1.64 | FTE | | 0.25 | FTE |

**Supplies, Services and Capital Outlay By Operation**

| Operation | Base Operations | | | Grant Operations | | | Enterprise Operations | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Division** | Admin. | Engineering | Compliance | Admin. | Engineering | Compliance | Admin. | Engineering | Compliance | **Totals** |
| Supplies | $ 4,932 | $ 4,110 | $ 4,658 | $ 50 | $ - | $ - | $ 1,400 | $ - | $ - | $ 15,150 |
| Services | $ 56,290 | $ 46,909 | $ 53,163 | $467,620 | $ - | $ - | $ 5,700 | $ - | $ - | $629,682 |
| Capital | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Subtotals** | **$ 61,222** | **$ 51,019** | **$ 57,821** | **$467,670** | **$ -** | **$ -** | **$ 7,100** | **$ -** | **$ -** | **$644,832** |
| | | **Supplies** | **$ 13,700** | | **Supplies** | **$ 50** | | **Supplies** | **$ 1,400** | |
| | | **Services** | **$156,362** | | **Services** | **$467,620** | | **Services** | **$ 5,700** | |
| | | **Capital** | **$ -** | | **Capital** | **$ -** | | **Capital** | **$ -** | |

**All Costs By Division**

| Category | Salaries | Supplies | Services | Capital | Totals |
|---|---|---|---|---|---|
| Administrative | $ 322,057 | $ 6,382 | $ 529,610 | $ - | $ 858,049 |
| Engineering | $ 181,622 | $ 4,110 | $ 46,909 | $ - | $ 232,640 |
| Compliance | $ 226,888 | $ 4,658 | $ 53,163 | $ - | $ 284,709 |
| **Subtotals** | **$ 730,567** | **$ 15,150** | **$ 629,682** | **$ -** | **$ 1,375,399** |

# RESOLUTION NO.: 2018-07
# BEFORE THE GOVERNING BOARD OF THE
# YAKIMA REGIONAL CLEAN AIR AGENCY (YRCAA)

Revising the Agency Fiscal Year (FY) 2019 Budget ……………………)

WHEREAS, the YRCAA Governing Board of Directors (Board) adopted the Proposed FY 2019 Budget in the amount of $1,141,715 on June 14, 2018; and

WHEREAS, substantial additional grant revenue of $550,000 was awarded to the agency after adoption of the FY 2019 Budget; and

WHEREAS, the Board held a Public Hearing on August 9, 2018 to consider adopting the Proposed Revisions to the FY 2019 Budget;

WHEREAS, the YRCAA provided the public with a 30-day opportunity to comment on the proposed revisions to the adopted FY 2019 budget from July 1st, 2018, through July 31st, 2018; and

NOW THERFORE BE IT RESOLVED, the Board hereby adopts the Revised FY 2019 Budget in the amount of $1,559,715; and

BE IT FURTHER RESOLVED, the YRCAA Executive Director shall implement said budget in accordance with the Revised FY 2019 Budget Work Plan and the Revised FY 2019 YRCAA Resource Allocation Summary.

On motion of __________________, seconded by __________________, the foregoing resolution is hereby PASSED AND ADOPTED by the Yakima Regional Clean Air Agency Board of Directors on this 9th day of August, 2018.

| | |
|---|---|
| ______________________________ | ______________________________ |
| Jon DeVaney, Chair | Ron Anderson, Director |
| ______________________________ | ______________________________ |
| Steven Jones, Director | Carmen Mendez, Director |
| ______________________________ | ______________________________ |
| Norm Childress, Director | Mary Wurtz, Clerk of the Board |

CLEAN AIR

# Executive Memorandum

**Date of Release:** August 2, 2018

**Date of Consideration:** August 9, 2018

**To:** YRCAA Board of Directors

**From:** Office of the Executive Director

**Subject:** Administrative Code Part C Revisions

Keith M. Hurley

**Issue:** Revisions to the agency's Administrative Code Part C, Public Records Policy.

**Discussion:** In March of 2018 the Attorney General revised Chapter 44-14 WAC, Public Records Act-Model Rules. The changes were made after considering case law and legislative developments since 2006-2007.

**Recommendation(s):** Approve Resolution No. 2018-08 revising YRCAA Administrative Code Part C.

# YRCAA Administrative Code
# Part C
# Public Records Policy—Model Rules

August 2018

# Table of Contents

## 1.0 INTRODUCTORY COMMENTS

**(1.1) Statutory authority and purpose:** The legislature directed the attorney general to adopt advisory model rules on public records compliance and to revise them from time to time. RCW **42.56.570** **(**2) and (3). The purpose of the model rules is to provide information to records requestors and state and local agencies about "best practices" for complying with the Public Records Act, chapter **42.56** RCW ("PRA" or "act"). The overall goal of the model rules is to establish a culture of compliance among agencies and a culture of cooperation among requestors by standardizing best practices throughout the state. The attorney general encourages state and local agencies to adopt the model rules (*but not necessarily the comments*) by regulation or ordinance. The act provides that local agencies should consult the model rules when establishing local ordinances implementing the act. RCW **42.56.570**(4). The act further provides that public records officer training must be consistent with the model rules. RCW **42.56.152**(3).

The act applies to all state agencies and local units of government. The model rules use the term "agency" to refer to either a state or local agency. Upon adoption, each agency would change that term to name itself (such as changing references from "name of agency" to "city"). To assist state and local agencies considering adopting the model rules, an electronic version of the rules is available on the attorney general's web site, http://www.atg.wa.gov/model-rules-public-disclosure.

The initial model rules in 2006-2007 were the product of an extensive outreach project. The attorney general held thirteen public forums all across the state to obtain the views of requestors and agencies. Many requestors and agencies also provided detailed written comments. The model rules reflect many of the points and concerns presented in those forums. For the model rules updates in 2018, the attorney general considered case law and legislative developments since 2006-2007. The attorney general sought additional comments from requestors, agencies, and others.

The model rules provide one approach (or, in some cases, alternate approaches) to processing public records requests. Agencies vary enormously in size, resources, and complexity of requests received. Any "one-size-fits-all" approach in the model rules, therefore, may not be best for requestors and agencies.

**(1.2) Format of model rules:** The model rules are published with comments. The comments have five-digit WAC numbers such as WAC **44-14-04001**. The model rules themselves have three-digit WAC numbers such as WAC **44-14-040**.

*The comments are designed to explain the basis and rationale for the rules themselves as well as provide broader context and legal guidance. To do so, the comments contain many citations to statutes, cases, and formal attorney general opinions. Agencies are encouraged to consult them.*

(**1.3) Model rules and comments are nonbinding:** The model rules, and the comments accompanying them, are advisory only and do not bind any agency. Accordingly, many of the comments to the model rules use the word "should" or "may" to describe what an agency or requestor is encouraged to do. The use of the words "should" or "may" are permissive, not mandatory, and are not intended to create any legal duty.

The model rules and comments are a useful guide in fulfilling the requirement to publish procedures and rules for making records available for inspection and copying. RCW **42.56.040, 42.56.070**(1), and WAC **44-14-01002.** While the model rules and comments are nonbinding, they should be carefully considered by requestors and state agencies. Local agencies should consider them in establishing local ordinances implementing the act. RCW **42.56.570.** The Washington courts have also considered the model rules in several appellate decisions.

(**1.4) Training is required:** The act is complicated, and compliance requires training. Training on the act is required for local elected officials, statewide elected officials, persons appointed to fill vacancies in a local or statewide office, and public records officers. RCW **42.56.150**; 42.56.152. Public records officers must also receive training on electronic records. RCW **42.56.152**(5). All agency employees should receive basic training on public records compliance and records retention; public records officers should receive more intensive training. Agencies are encouraged to document training for persons required to receive training. The attorney general's office has training resources including sample training documentation forms available on its web site at http://www.atg.wa.gov/OpenGovernmentTraining.aspx. Training can be the difference between a satisfied requestor and expensive litigation. The courts can consider lack of training as a penalty factor in actions filed under RCW **42.56.550**, the act's enforcement provision.

(**1.5) Additional Resources:** Several web sites provide information on the act. The attorney general office's web site on public records is http://www.atg.wa.gov/obtaining-records, which also includes a link to an Open Government Resource Manual. The Municipal Research and Services Center (MRSC), an entity serving local governments, provides public records resources on its web site at http://mrsc.org/Home.aspx. A requestor's organization, the Washington Coalition for Open Government, has materials on its web site at www.washingtoncog.org. The Washington Association of Public Records Officers has resources for public records officers on its web site at http://wapro.memberclicks.net.
More materials are available from other organizations such as the Washington State Bar Association.

## 2.0 AUTHORITY AND PURPOSE

**(2.1)** RCW **42.56.070**(1) requires each agency to make available for inspection and copying nonexempt "public records" in accordance with published rules. The act defines "public record" at RCW **42.56.010**(3) to include any "writing containing information relating to the conduct of government or the performance of any governmental or proprietary function prepared, owned, used, or retained" by the agency. RCW **42.56.010**(3) excludes from the definition of "public record" the records of volunteers that are not otherwise required to be retained by the agency and which are held by volunteers who do not serve in an administrative capacity; have not been appointed by the agency to an agency board, commission or internship; and do not have a supervisory role or delegated authority. RCW **42.56.070**(2) requires each agency to set forth "for informational purposes" every law, in addition to the Public Records Act, that exempts or prohibits the disclosure of public records held by that agency.

**(2.2)** The purpose of these rules is to establish the procedures the Yakima Regional Clean Air Agency (YRCAA) will follow in order to provide full access to public records. These rules provide information to persons wishing to request access to public records of the YRCAA and establish processes for both requestors and YRCAA staff that are designed to best assist members of the public in obtaining such access.

**(2.3)** The purpose of the act is to provide the public full access to information concerning the conduct of government, mindful of individuals' privacy rights and the desirability of the efficient administration of government. The act and these rules will be interpreted in favor of disclosure. In carrying out its responsibilities under the act, the YRCAA will be guided by the provisions of the act describing its purposes and interpretation.

## 3.0 AGENCY DESCRIPTION—CONTACT INFORMATION—PUBLIC RECORDS OFFICER (PRO)

**(3.1)** The YRCAA is the local air pollution control agency for Yakima County and was created pursuant to Chapter 70.94 RCW, the Washington State Clean Air Act (WCAA). The YRCAA's office is located at 329 N. 1st Street, Yakima, WA 98908.

**(3.2)** Any person wishing to request access to public records of the YRCAA, or seeking assistance in making such a request should contact the Public Records Officer (PRO) of the YRCAA:

Mary Wurtz
YRCAA, 329 N. 1st Street, Yakima, WA 98908
(509) 834-2050, fax. (509) 834-2060
maryw@yrcaa.org

Information is also available at the YRCAA's web site at https://www.yakimacleanair.org

**(3.3)** The public records officer will oversee compliance with the act but another YRCAA staff member may process the request. Therefore, these rules will refer to the public records officer "or designee."
The public records officer or designee and the YRCAA will provide the "fullest assistance" to requestors; ensure that public records are protected from damage or disorganization; and prevent fulfilling public records requests from causing excessive interference with essential functions of the YRCAA.

## 4.0 AVAILABILITY OF PUBLIC RECORDS

**(4.1) Hours for inspection of records.** Public records are available for inspection and copying during normal business hours of the YRCAA, Monday through Friday, 9:00 a.m. to 5:00 p.m., excluding legal holidays. Records must be inspected at the offices of the YRCAA.

**(4.2) Records index.** The YRCAA finds that maintaining an index is unduly burdensome and would interfere with agency operations. The Governing Board of Directors adopted Resolution 2011-01 exempting the Agency from maintaining a records index under the provisions of RCW

42.56.070(4).

**(4.3) Organization of records.** The YRCAA will maintain its records in a reasonably organized manner. The YRCAA will take reasonable actions to protect records from damage and disorganization. A requestor shall not take YRCAA records from YRCAA offices without the permission of the YRCAA PRO. Some records are available on the YRCAA web site at https://www.yakimacleanair.org. Requestors are encouraged to view the documents available on the web site prior to submitting a records request.

**(4.4) Making a request for public records.**

(a) Any person wishing to inspect or copy public records of the YRCAA should make the request in writing on the YRCAA request form, or by letter, fax, or email addressed to the public records officer at maryw@yrcaa.org, or by submitting the request in person at YRCAA, 329 N. 1st Street, Yakima, WA 98908 and including the following information:

- Name of requestor;
- Address of requestor;
- Other contact information, including telephone number and any e-mail address;
- Identification of the public records adequate for the PRO or designee to locate the records; and
- The date and time of day of the request.

(b) If the requestor wishes to have copies of the records made instead of simply inspecting them, he or she should so indicate and make arrangements to pay for copies of the records or a deposit. Pursuant to section 8, standard photocopies will be provided at fifteen cents per page.

(c) A form is available for use by requestors at the office of the PRO and online at https://www.yakimacleanair.org.

(d) The PRO or designee may accept requests for public records that contain the above information by telephone or in person. If the public records officer or designee accepts such a request, he or she will confirm receipt of the information and the substance of the request in writing.

(e) If requestors refuse to identify themselves or provide sufficient contact information, the agency will respond to the extent feasible and consistent with the law.

## 5.0 PROCESSING OF PUBLIC RECORDS REQUESTS—GENERAL

**(5.1) Providing "fullest assistance."** The YRCAA is charged by statute with adopting rules which provide for how it will "provide full access to public records," "protect records from damage or disorganization," "prevent excessive interference with other essential functions of the agency," provide "fullest assistance" to requestors, and provide the "most timely possible action" on public records requests. The PRO or designee will process requests in the order allowing the most requests to be processed in the most efficient manner.

Upon receipt of a request, the YRCAA will assign it a tracking number and log it in. The PRO or designee will evaluate the request according to the nature of the request, volume, and availability of requested records.

**(5.2) Acknowledging receipt of request.** Following the initial evaluation of the request under (3) of this subsection, and within five business days of receipt of the request, the PRO will do one or more of the following:

(a) Make the records available for inspection or copying including:

(i) If copies are available on the YRCAA's internet web site, provide an internet address and link on the web site to specific records requested;

(ii) If copies are requested and payment of a deposit for the copies, if any, is made or other terms of payment are agreed upon, send the copies to the requestor;

(b) Acknowledge receipt of the request and provide a reasonable estimate of when records or an installment of records will be available (the PRO or designee may revise the estimate of when records will be available); or

(c) Acknowledge receipt of the request and ask the requestor to provide clarification for a request that is unclear, and provide, to the greatest extent possible, a reasonable estimate of time the YRCAA will require to respond to the request if it is not clarified.

(i) Such clarification may be requested and provided by telephone, and memorialized in writing;

(ii) If the requestor fails to respond to a request for clarification and the entire request is unclear, the YRCAA need not respond to it. The YRCAA will respond to those portions of a request that are clear; or

(d) Deny the request.

**(5.3) Consequences of failure to respond.** If the YRCAA does not respond in writing within five business days of receipt of the request for disclosure, the requestor should contacting the PRO to determine the reason for the failure to respond.

**(5.**4) **Protecting rights of others.** In the event that the requested records contain information that may affect rights of others and may be exempt from disclosure, the PRO may, prior to providing the records, give notice to such others whose rights may be affected by the disclosure. Such notice should be given so as to make it possible for those other persons to contact the requestor and ask him or her to revise the request, or, if necessary, seek an order from a court to prevent or limit the disclosure. The notice to the affected persons will include a copy of the request.

**(5.5) Records exempt from disclosure.** Some records are exempt from disclosure, in whole or in part. If the YRCAA believes that a record is exempt from disclosure and should be withheld, the public records officer will state the specific exemption and provide a brief explanation of why the record or a portion of the record is being withheld. If only a portion of a record is exempt from disclosure, but the remainder is not exempt, the public records officer will redact the exempt portions, provide the nonexempt portions, and indicate to the requestor why portions of the record are being redacted.

**(5.6) Inspection of records.**

(a) Consistent with other demands, the YRCAA shall promptly provide space to inspect public records. No member of the public may remove a document from the viewing area or disassemble or alter any document. The requestor shall indicate which documents he or she wishes the agency to copy.

(b) The requestor must claim or review the assembled records within thirty days of the YRCAA's notification to him or her that the records are available for inspection or copying. The agency will notify the requestor in writing of this requirement and inform the requestor that he or she should contact the agency to make arrangements to claim or review the records. If the requestor or a representative of the requestor fails to claim or review the records within the thirty-day period or make other arrangements, the YRCAA may close the request and refile the assembled records. Other public records requests can be processed ahead of a subsequent request by the same person for the same or almost identical records, which can be processed as a new request.

**(5.7) Providing copies of records.** After inspection is complete, the PRO or designee shall make the requested copies or arrange for copying. Where the YRCAA charges for copies, the requestor must pay for the copies.

**(5.8) Providing records in installments.** When the request is for a large number of records, the PRO or designee will provide access for inspection and copying in installments, if he or she reasonably determines that it would be practical to provide the records in that way. If, within thirty days, the requestor fails to inspect the entire set of records or one or more of the installments, the PRO or designee may stop searching for the remaining records and close the request.

**(5.9) Completion of inspection.** When the inspection of the requested records is complete and all requested copies are provided, the PRO or designee will indicate that the YRCAA has completed a reasonable search for the requested records and made any located nonexempt records available for inspection.

**(5.10) Closing withdrawn or abandoned request.** When the requestor either withdraws the request, or fails to clarify an entirely unclear request, or fails to fulfill his or her obligations to inspect the records, pay the deposit, pay the required fees for an installment, or make final payment for the requested copies, the PRO will close the request and, unless the agency has already indicated in previous correspondence that the request would be closed under the above circumstances, indicate to the requestor that the YRCAA has closed the request.

**(5.11) Later discovered documents.** If, after the YRCAA has informed the requestor that it has provided all available records, the YRCAA becomes aware of additional responsive documents existing at the time of the request, it will promptly inform the requestor of the additional documents and provide them on an expedited basis.

## 6.0 PROCESSING OF PUBLIC RECORDS REQUESTS— ELECTRONIC RECORDS

**(6.1) Requesting electronic records.** The process for requesting electronic public records is the same as for requesting paper public records.

**(6.2) Providing electronic records.** When a requestor requests records in an electronic format, the PRO will provide the nonexempt records or portions of such records that are reasonably locatable in an electronic format that is used by the YRCAA and is generally commercially available, or in a format that is reasonably translatable from the format in which the agency keeps the record. Costs for providing electronic records are governed by RCW **42.56.120** and **42.56.130.** The fee schedule is available at https://www.yakimacleanair.org.

**(6.3) Customized access to data bases.** While not required, and with the consent of the requestor, the YRCAA may decide to provide customized electronic access services and assess charges under RCW **42.56.120** (2)(f). A customized service charge applies only if the YRCAA estimates that the request would require the use of information technology expertise to prepare data compilations, or provide customized electronic access services when such compilations and customized access services are not used by the agency for other purposes. The YRCAA may charge a fee consistent with RCW **42.56.120** (2)(f) for such customized access. The fee schedule is available at https://www.yakimacleanair.org.

## (7.0) EXEMPTIONS

**(7.1)** The Public Records Act provides that a number of types of documents are exempt from public inspection and copying. In addition, documents are exempt from disclosure if any "*other statute*" exempts or prohibits disclosure. Requestors should be aware of the following exemptions, outside the Public Records Act, that restrict the availability of some documents held by YRCAA for inspection and copying:

**Washington State Statutes**

| Citation | Records/Information |
|---|---|
| RCW 2.64.113 | Confidentiality - violations |
| RCW 5.60.060 | Privileged communications |
| RCW 5.60.070 | Court-ordered mediation records |
| RCW 10.97.070 | Disclosure of identity of suspect to victim |
| RCW 18.04.405 | Confidentiality of information gained by CPA |
| RCW 19.215.020 | Destruction of personal health and financial information |
| RCW 19.215.030 | Compliance with federal rules |
| RCW 40.14 | Preservation and destruction of public records |
| RCW 42.23.070(4) | Municipal officer disclosure of confidential information prohibited |
| RCW 42.41.030(7) | Identity of local government whistleblower |
| RCW 42.41.045 | Non-disclosure of protected information (whistleblower) |
| RCW 42.56.610 | Certain information from dairies and feedlots limited-Rules |
| RCW 46.52.130(2) | Abstract of driving record |
| RCW 48.62.101 | Local government insurance transactions – access to information |
| RCW 50.13.060 | Access to employment security records by local government agencies |
| RCW 50.13.100 | Disclosure of non-identifiable information or with consent |
| RCW 51.28.070 | Worker's compensation records |
| RCW 51.36.060 | Physician information on injured workers |
| RCW 70.58.104 | Vital records, research confidentiality safeguards |
| RCW 70.94.205 | Confidential business information |
| **Selected Federal Confidentiality Statutes and Rules** | |
| 5 USC § 552a | Privacy Act records maintained on individuals |
| 20 USC § 1232g | Family Education Rights and Privacy Act |
| 42 USC 405(c)(2)(vii)(l) | Limits on Use and Disclosure of Social Security Numbers. |
| 45 FR 160-164 | HIPAA Privacy Rule |

**NOTE: The YRCAA is prohibited by statute from disclosing lists of individuals for commercial purposes.**

## (8.0) COSTS OF PROVIDING COPIES OF PUBLIC RECORDS

**(8.1) Inspection.** There is no fee for inspecting public records, including inspecting records on the YRCAA web site.

**(8.2) Statutory default costs.** The YRCAA is not calculating actual costs for copying its records because to do so would be unduly burdensome for the following reasons: The YRCAA does not have the resources to conduct a study to determine actual copying costs for all its records; to conduct such a study would interfere with other essential agency functions; and, through the legislative process, the public and requestors have commented on and been informed of authorized fees and costs provided in the Public Records Act including RCW **42.56.120** and other laws. Therefore, in order to timely implement a fee schedule consistent with the Public Records Act, it is more cost efficient, expeditious and in the public interest for the YRCAA to adopt the state legislature's approved fees and costs for most of the YRCAA's records, as authorized in RCW **42.56.120** and as published in the agency's fee schedule.

**(8.3) Fee schedule.** The YRCAA fee schedule is available at 329 N. 1st Street, Yakima, WA 98908 and on YRCAA's web site at https://www.yakimacleanair.org.

**(8.4) Processing payments.** Before beginning to make the copies or processing a customized service, the PRO or designee may require a deposit of up to ten percent of the estimated costs of copying all the records selected by the requestor. The PRO or designee may also require the payment of the remainder of the copying costs before providing all the records, or the payment of the costs of copying an installment before providing that installment. The YRCAA will not charge sales tax when it makes copies of public records.

**(8.5) Costs of mailing.** The YRCAA may also charge actual costs of mailing, including the cost of any shipping container.

**(8.6) Payment.** Payment may be made by cash, check, or money order to the YRCAA.

## 9.0 REVIEW OF DENIALS OF PUBLIC RECORDS

**(9.1) Petition for internal administrative review of denial of access.** Any person who objects to the initial denial or partial denial of a records request may petition in writing (including e-mail) to the PRO for a review of that decision. The petition shall include a copy of or reasonably identify the written statement by the PRO or designee denying the request.

**(9.2) Consideration of petition for review.** The PRO shall promptly provide the petition and any other relevant information to the Executive Director. The Executive Director will immediately consider the petition and either affirm or reverse the denial within two business days following the YRCAA's receipt of the petition, or within such other time as the YRCAA and the requestor mutually agree to.

**(9.3) Judicial review.** Any person may obtain court review of denials of public records requests pursuant to RCW **42.56.550** at the conclusion of two business days after the initial denial regardless of any internal administrative appeal.

# RESOLUTION NO: 2018-08
# BEFORE THE GOVERNING BOARD OF THE
# YAKIMA REGIONAL CLEAN AIR AGENCY (YRCAA)

Adopting Revised Administrative Code Part C-YRCAA Public Records Policy:

WHEREAS, the Board of Directors of the YRCAA, as set forth in chapter 70.94 of the Revised Code of Washington, is authorized to establish specific operating policies, procedures and guidelines to implement the Revised Code of Washington and Washington Administrative Code applicable to public agencies; and

WHEREAS, Administrative Code Part C, as revised, incorporates the March 2018 updates to chapter 44-14 WAC, Public Records Act-Model Rules; and

WHEREAS, Administrative Code Part C, as revised, replaces and supersedes all previous versions of Administrative Code Part C;

BE IT THEREFORE RESOLVED that the Board does hereby adopt the revised Administrative Code Part C, dated August 9, 2018.

On motion of ______________________, seconded by _________________________, the foregoing resolution is hereby PASSED AND ADOPTED by the Yakima Regional Clean Air Agency Board of Directors on this 9th day of August 2018.

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|---|---|
| ______________________________ | ______________________________ |
| Jon DeVaney, Chair | Ron Anderson, Director |
| ______________________________ | ______________________________ |
| Steven Jones, Director | Carmen Mendez, Director |
| ______________________________ | ______________________________ |
| Norm Childress, Director | Mary Wurtz, Clerk of the Board |