






Board of Directors Meeting

November 19, 2019

2:00pm



695 Moores Creek Lane | Charlottesville, Virginia 22902-9016

434.977.2970 
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www.rivanna.org 

BOARD OF DIRECTORS

Regular Meeting of the Board of Directors of Rivanna Solid Waste Authority

DATE: November 19, 2019

LOCATION: Conference Room, Administration Building
695 Moores Creek Lane, Charlottesville, VA

TIME: 2:00 p.m.

AGENDA

1. CALL TO ORDER

2. MINUTES OF PREVIOUS BOARD MEETING

- a. Minutes of the Special Meeting of the Board on September 24, 2019

3. RECOGNITION

- a. Resolution of Appreciation for Kathy Galvin

4. EXECUTIVE DIRECTOR'S REPORT

5. ITEMS FROM THE PUBLIC

6. RESPONSES TO PUBLIC COMMENTS

7. CONSENT AGENDA

- a. Staff Report on Finance
- b. Staff Report on Ivy Material Utilization Center/Recycling Operations Update
- c. Amendment of the Bylaws Regarding Monthly Meetings and Approval of the Board Meeting Schedule for Calendar Year 2020

8. OTHER BUSINESS

- a. Comprehensive Annual Financial Report Fiscal Year Ending June 30, 2018; Mr. Robert Huff, Robinson, Farmer, Cox Associates
- b. Presentation: Forestry Management Plan for the IMUC, Phil McKalips, Division Director, and David Powell, VA Dept of Forestry

(BEGIN THE RWSA MEETING)

- c. Presentation: Strategic Plan Update; Katie McIlwee, Communications Manager

(COMPLETE THE RWSA MEETING)

9. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA

10. CLOSED MEETING

11. ADJOURNMENT

GUIDELINES FOR PUBLIC COMMENT AT RIVANNA BOARD OF DIRECTORS MEETINGS

If you wish to address the Rivanna Board of Directors during the time allocated for public comment, please raise your hand or stand when the Chair asks for public comments.

Members of the public requesting to speak will be recognized during the specific time designated on the meeting agenda for "Items From The Public." Each person will be allowed to speak for up to three minutes. When two or more individuals are present from the same group, it is recommended that the group designate a spokesperson to present its comments to the Board and the designated speaker can ask other members of the group to be recognized by raising their hand or standing. Each spokesperson for a group will be allowed to speak for up to five minutes.

During public hearings, the Board will attempt to hear all members of the public who wish to speak on a subject, but it must be recognized that on rare occasion presentations may have to be limited because of time constraints. If a previous speaker has articulated your position, it is recommended that you not fully repeat the comments and instead advise the Board of your agreement. The time allocated for speakers at public hearings are the same as for regular Board meetings, although the Board can allow exceptions at its discretion.

Speakers should keep in mind that Board of Directors meetings are formal proceedings and all comments are recorded on tape. For that reason, speakers are requested to speak from the podium and wait to be recognized by the Chair. In order to give all speakers proper respect and courtesy, the Board requests that speakers follow the following guidelines:

- Wait at your seat until recognized by the Chair.
- Come forward and state your full name and address and your organizational affiliation if speaking for a group;
- Address your comments to the Board as a whole;
- State your position clearly and succinctly and give facts and data to support your position;
- Summarize your key points and provide the Board with a written statement, or supporting rationale, when possible;
- If you represent a group, you may ask others at the meeting to be recognized by raising their hand or standing;
- Be respectful and civil in all interactions at Board meetings;
- The Board may ask speakers questions or seek clarification, but recognize that Board meetings are not a forum for public debate; Board Members will not recognize comments made from the audience and ask that members of the audience not interrupt the comments of speakers and remain silent while others are speaking so that other members in the audience can hear the speaker;
- The Board will have the opportunity to address public comments after the public comment session has been closed;
- At the request of the Chair, the Executive Director may address public comments after the session has been closed as well; and
- As appropriate, staff will research questions by the public and respond through a report back to the Board at the next regular meeting of the full Board. It is suggested that citizens who have questions for the Board or staff submit those questions in advance of the meeting to permit the opportunity for some research before the meeting.

The agendas of Board meetings, and supporting materials, are available from the RWSA Administration Office upon request or can be viewed on the Rivanna website(s)

RSWA BOARD OF DIRECTORS
Minutes of Special Meeting
September 24, 2019

A special meeting of the Rivanna Solid Waste Authority (RSWA) Board of Directors was held on Tuesday, September 24, 2019 at 2:02 p.m. in the 2nd floor conference room, Administration Building, 695 Moores Creek Lane, Charlottesville, Virginia.

Board Members Present: Paul Oberdorfer, Kathy Galvin, Mike Gaffney, Dr. Liz Palmer, Jeff Richardson, Lance Stewart, Dr. Tarron Richardson (arrived at 2:10 p.m.).

Board Members Absent: None.

Rivanna Staff Present: David Rhoades, Phil McKalips, Michelle Simpson, Austin Marrs, Andrea Terry, Victoria Fort, Jennifer Whitaker, Scott Schiller, Liz Coleman, Dr. Bill Morris, Dyon Vega, Katie McIlwee, Bill Mawyer.

Attorney(s) Present: Mr. Kurt Krueger.

Also Present: Members of the public and media representatives.

1. CALL TO ORDER

Mr. Gaffney called the meeting to order at 2:02 p.m.

2. MINUTES OF PREVIOUS BOARD MEETING

a. Minutes of the Regular Meeting of the Board on August 27, 2019

Mr. Gaffney asked members if they had comments, questions, or wished to make changes to the minutes of the August 27 meeting.

Dr. Palmer moved that the Board approve the minutes. The motion was seconded by Ms. Galvin and passed unanimously (6-0). Dr. Richardson had not yet arrived at the meeting and was absent from the vote.

3. RECOGNITION

There were no recognitions.

4. EXECUTIVE DIRECTOR'S REPORT

Mr. Bill Mawyer, Executive Director, RSWA, presented to the Board. He stated that as part of the strategic plan and workforce development goal, with a succession management initiative, they are excited to have coordinated with PVCC to provide a project management training course for middle managers. He stated they will also receive some free training from Virginia Risk Sharing Association, their property and liability insurance provider, which has a library of training videos. He reminded the Board that it approved the acceptance of long-term care insurance through the Virginia Retirement System and that the open enrollment period runs from

46 September 16 – October 11, during which time employees may register directly with Genworth
47 Life, the provider.

48
49 Mr. Mawyer stated they have had community outreach with the Monticello Garden Club and that
50 he spoke with the Blue Ridge Home Builders Association yesterday about new services offered,
51 hours of operation, and reduced costs at the Ivy Transfer Station.

52
53 Mr. Mawyer stated the Alpha Phi Omega services group has assisted with trash pickup along
54 Dick Woods Road. He stated that August was a big month for the Ivy facility as they had 4,802
55 vehicles and averaged 115 tons per day, which is close to the record.

56
57 Mr. Mawyer drew the Board's attention to Item 7b in the agenda packet, which has a graph
58 created by Phil McKalips that shows the increase in tonnage at the Ivy Transfer Station from
59 January – August. He noted that they expected some increase during the summer, which may go
60 down as winter approaches, and that the Board's objective to increase tonnage has been met. He
61 next brought Item 7a, Financial Report, to the Board's attention. He pointed out that the Ivy
62 MSW program had a net positive cash flow as a result of revenue exceeding expenses for the
63 first two months, with a net of 60 cents per ton. He contrasted this with past deficits equaling
64 hundreds of dollars per ton.

65
66 Dr. Palmer remarked that she doesn't believe this has happened before.

67
68 Mr. Mawyer informed the Board that the household hazardous waste and bulky waste collection
69 programs will begin this Thursday with a commercial collection, followed by residential
70 household hazardous waste collection on Friday and Saturday, and then bulky waste amnesty
71 collection days on October 5 and 12, which includes furniture. He noted that the County pays
72 64.5% and the City pays 35.5% of the cost of household hazardous waste services in accordance
73 with the environmental agreement, while the cost of bulky waste collection to each municipality
74 is determined by the origin of the items, which they track. He continued that electronic waste
75 collection will be held on October 26, which is also supported by both the City and County.

76
77 Mr. Mawyer announced that Employee Appreciation Day will be held on October 31, a pumpkin
78 smash will be held at the recycling center on November 2, and America Recycles Day will be
79 celebrated on November 15. He invited Board members to attend the Employee Appreciation
80 Day event.

81
82 Mr. Mawyer reminded the Board that in June they discussed development rights of the property
83 near Ivy and stated a professional appraiser has determined the development right to be valued at
84 \$20K. He concluded his report.

85
86 Mr. Gaffney invited questions or comments from the Board.

87
88 Ms. Galvin praised the inclusion of a graph in the presentation.

89
90 Mr. Gaffney noted that the 115 tons per day does not include the period when the facility was
91 closed as a result of a fire and asked if they saw a bump right after that time or if it was steady
92 for the month.

Mr. McKalips replied that it seemed much busier the day they reopened, but then returned to normal the day after.

5. ITEMS FROM THE PUBLIC

Mr. Gaffney opened the Items from the Public portion of the meeting. As no one came forward to address the Board Mr. Gaffney closed the Items from the Public portion of the meeting.

6. RESPONSES TO PUBLIC COMMENTS

7. CONSENT AGENDA

a. Staff Report on Finance

b. Staff Report on Ivy Material Utilization Center/Recycling Operations Update

c. General Administrative Procedures

*d. Award of Nonprofessional Services Contract On-Call Dam Maintenance Services:
Bander Smith, Inc*

Mr. Gaffney asked if any members wished to pull an item. There were no members who wished to do so.

Dr. Palmer moved that the Board approve the Consent Agenda. The motion was seconded by Ms. Galvin and passed unanimously (7-0).

8. OTHER BUSINESS

a. Presentation: Charlottesville's Landfill Diversion Program; Kristel Riddervold, Environmental Sustainability Manager, and Marty Silman, Public Service Manager

Mr. Marty Silman presented. He noted that he began in Public Works about a year and a half ago and has looked at all the components of the solid waste program, which included the posing of questions to staff. He described the program as comprehensive, with good services offered to the community, such as curb side pickup, large item pickup, and leaf collection. He stated he has looked to revamp the program and has issued a request for proposal of consulting firms to review their in-house and contracted service programs, pointing out that the curb-side pickup program is contracted, while large item, leaf pickup, dead animals, and some business customer pickups are conducted in house. He noted that they offer a dumpster service contract utilized by the schools and some City facilities. He stated the solid waste budget has an approximate deficit of \$800K, which the City subsidizes and which will be looked at by the consultant.

Dr. Palmer asked what the total budget is.

Mr. Oberdorfer replied that it is \$1.8M

Mr. Silman pointed out that they allow private contractors to conduct curb-side pickup, which makes enforcement very difficult.

142
143 Mr. Silman noted that the RFP is solutions based, with a problem statement, and they hope to obtain
144 good direction from the consultant. He stated they will make outreaches to the public and to
145 stakeholders, such as the schools and UVA, and the outer ring of Charlottesville, with a focus on
146 landfill diversion of waste and on how to address the changing market for recycling. He stated the
147 consultant will provide a report that outlines a series of options for which they can partner with City
148 Council and they hope to have a dynamic program that keeps up with changes, that is sustainable in
149 the long run, that includes composting and local recycling, and that might close the budget deficit.
150 He stated they will interview candidates and the selection team will select a consultant within the
151 next month or two.

152
153 Dr. Palmer remarked that she has been confused about the ordinance that allows additional haulers
154 besides the one contracted with by the Authority, and noted that State laws also govern this. She
155 asked if they are assuming that this is just a matter of if they decide to change the ordinance it would
156 take care of who picks up in the City.

157
158 Mr. Silman replied that a solutions-based ordinance does not dictate what they want the consultant
159 to look at as they want the consultant to make recommendations on a suite of options. He stated the
160 consultant will review the ordinance and look at ways to improve enforcement opportunities.

161
162 Mr. Krueger added that he thinks Dr. Palmer is referring to flow control ordinances and whether
163 Charlottesville has or would have its consultant look at, if it doesn't have one, whether it would
164 have Charlottesville look at whether it wants to adopt a flow control ordinance, which requires
165 people to dispose of trash through the City and not through private haulers. [Ed. Note: Flow
166 control ordinances generally refer to ordinances restricting the locations at which collected refuse
167 may be disposed. However, municipalities in Virginia may also restrict the collection of refuse as
168 well, subject to certain constraints.]

169
170 Mr. Silman agreed that this is certainly an option.

171
172 Dr. Palmer confirmed that this is basically what she was asking, though she is also asking if there is
173 a State law that prohibits that.

174
175 Mr. Krueger replied that there are limitations under State law for doing that, though he believes they
176 are generally allowed, and Rivanna considered this about ten years ago but did not do it.

177
178 Dr. Palmer asked if there are other ordinances they are looking at.

179
180 Mr. Silman responded that initially they will only look at the solid waste ordinance, though it is
181 possible they may determine that other areas of the ordinance need to be looked at.

182
183 Dr. Palmer asked where they take a dead deer.

184
185 Mr. Silman replied that they take them to Republic in Troy.

186
187 Dr. Palmer emphasized that the Board of Supervisors is very interested in determining ways in
188 which it can work with the City.
189

Mr. Silman remarked that those involved in this with the City are very excited about moving forward.

Ms. Galvin wondered if the flow ordinance is related to the \$800K ordinance and the fact that some people use private haulers instead of the contractor, for which they are not recouping costs. She asked if stakeholders that will be on the review panel and who will be interviewed by the consultant will include representatives from the City, County, and UVA.

Ms. Silman confirmed that a County representative will serve on the review panel as a non-voting member and will provide feedback on the proposals.

Ms. Galvin observed that yard clearance has become a bigger issue as a result of extreme weather events and asked Mr. Silman if he sees this issue increasing in importance.

Mr. Silman replied that he thinks it is a hindrance that they don't have a dedicated yard waste program.

Dr. Palmer remarked that this is quite daunting for a lot of residents as the County is over 700 square miles in size

Mr. Jeff Richardson asked for the percentage of residents that come under the City's contract.

Mr. Silman responded that he does not know but offered to get this information.

Mr. Richardson asked for the number of haulers in the City besides the contract.

Mr. Silman named County Waste, Time, and Republic, and stated there are others, though he couldn't recall which ones.

Mr. Oberdorfer remarked that the haulers are not permitted.

Dr. Tarron Richardson expressed his concern with the number of haulers in the City and stated he would prefer to have one hauler provide all services throughout the City and to have the ability to bring in additional equipment during inclement weather to take care of the additional waste and dispose of it. He stated this will probably decrease the deficit considerably.

Dr. Palmer emphasized that the population is aging, a lot of people can't handle the trash cans, and stated she has observed haulers go up driveways and into residents' garages, though County Waste requires the can to be placed at the end of the driveway.

Dr. Richardson pointed out that residents over a certain age can complete a form to request that haulers come up the driveway.

Mr. Richardson added that this encompasses anything related to ADA.

Mr. Silman stated they have a form that can be requested and that there are 18 – 20 residents who take advantage of this service.

Dr. Palmer remarked that it can become a problem if haulers charge extra for this and she has seen people burn trash or put it in a pit because of the issue with getting it to the end of the driveway.

Mr. Richardson asked Mr. Silman if they do only residential or both residential and commercial.

Mr. Silman replied that, under the current program, they pick up for business customers in the downtown mall, Belmont, and uptown areas and the study will look at multi-family and business district opportunities.

Ms. Kristel Riddervold, Environmental Sustainability and Facilities Development Manager, pointed out that there is a business, a logistics, and a financial side to this and that dealing with waste is also a climate protection strategy. She noted that 60% of what goes to the landfill is organic material, which decomposes and creates the problem of methane, and that it is a timely issue that both the County and City should look at.

Dr. Palmer thanked Ms. Riddervold for bringing up the climate issue.

Ms. Galvin asked if the RFP will also look at climate effects.

Mr. Silman confirmed that it will.

b. Presentation: Composting Feasibility Study; Bill Mawyer, Executive Director and Craig Coker, Coker Composting and Consulting

Mr. Mawyer reminded the Board that a master plan for the Ivy facility was completed last year, which included a composting facility. He stated that Craig Coker, the consultant, has conducted a composting feasibility study, and is in the audience for assistance. He stated they currently have composting bins at McIntire Recycling Center and presented a photograph of them. He continued that the composting material is transported by the contractor, Natural Organic Processes Enterprise (NOPE), to McGill Environmental and equals about 50 tons/year of food waste at a cost of \$12K. He pointed out that Waverly is located about 120 miles to the southeast and so it is a pretty good distance away. He stated they also offer composting at Ivy Material Utilization Center and provide a can in which residents can deposit food waste for free and businesses can bring waste at a cost of \$178/ton.

Mr. Mawyer stated that UVA's contractor, Black Bear, brings UVA's compostable food waste through Ivy, where it is weighed and a charge of \$178/ton is levied. He stated they pay \$154/ton to have the waste transported to the facility in Crimora, with the \$24 difference used to cover RSWA's costs. He stated that UVA sends about 500 tons/year through the facility and the facility processes about 550 tons/year, with UVA's composting waste being sent to a location in Crimora that is 28 miles away. He stated they treat about 14,000 tons/year of bio-solids at Moores Creek treatment plant through the use of a spinning centrifuge, which dries the sludge, after which a conveyor belt transports it to a tractor trailer. He continued that they truck in septage from Glenmore and Scottsville wastewater treatment plants, after which it is processed and then loaded on to a truck, at an annual cost of \$600,000 to \$700,000/year. He presented a photograph of the Waverly composting facility

Mr. Mawyer stated that Mr. Coker looked at three self-composting options, including a wind row facility at Ivy, an aerated static pile facility for wastewater bio-solids, and a combining of food

waste and bio-solids at Ivy. He stated that Mr. Coker projects that a food waste diversion program could grow from 550 tons/year to 4,000 tons/year by 2030 with governmental help, and reduce greenhouse gas emissions by 11.8%. He presented a photograph of a compost container and noted that they provide residents with compostable bags. He stated that Mr. Coker and staff have come up with alternatives for windrow composting of food waste at Ivy with a 4,000 ton/year facility at a cost to build and equip of \$950K and annual operating costs of approximately \$115K. He continued that Mr. McKalips, Mr. Wood, and he have come up with two other alternatives to try to bring the cost down a bit, with one being a 2,000 ton/year facility at a lower cost and operating expense, and the other being a 1,000 ton/year facility, as compared to their current 550/ton year capacity.

Mr. Mawyer stated that Mr. Coker has also looked at the composting of bio-solids at Ivy and projects a cost of \$6M to construct and equip the facility with an approximate annual operating cost of \$1M.

Ms. Galvin asked if this is a combined cost.

Mr. Mawyer confirmed that it is a combined cost.

Ms. Galvin speculated that they would save on the transportation costs of driving to the Waverly and Crimora facilities and asked if this was factored into the cost estimates to arrive at a net cost.

Mr. Coker replied that the costs were factored into the net present value to calculate the dollar per ton.

Mr. Mawyer added that fuel miles were factored in and they reached the conclusion that, from a financial standpoint of factoring in mileage and the present value of making a new investment, Rivanna should continue to compost food waste at an off-site facility and that, should they compost at Ivy, it would be food waste only and recommended the 2,000/ton per year facility. He stated that Mr. Coker recommends they not construct a bio-solids composting facility at Ivy as they would be better off financially if they were to continue to ship waste to McGill or to a similar facility. He stated that staff has come up with an idea to bring food waste to the bio-solids trailer at Moores Creek. He stated that Mr. McKalips has had a conversation with a private company about having this company build and operate a facility at Ivy, though they don't yet have information on the specifics of capacity and costs.

Dr. Palmer observed that in the report the transportation costs of composting represent a small percentage of the total and believes that the value of the compost has not been taken into consideration. She expressed interest in learning the cost to combine food waste with bio-solids, which she stated is a good alternative as they ramp up the composting program in the County and City. She stated she doesn't see how they will achieve a 4,000 ton capacity in ten years and likes the idea of ramping up the program before putting in the infrastructure in order to see how successful it will be and it gives the private sector more time to see if they would like to become involved. She asked how long it will take to add 1,000 tons to the sludge.

Mr. Mawyer replied that it would be a year and that they can have an engineer conduct an analysis and have more information in three to six months. He stated they could potentially have a ramp on which to roll the yellow carts, dump the waste into the truck and send it to Waverly,

335 though they will not have the capacity to process a huge container from UVA and the waste will
336 have to be brought in fairly frequently in smaller quantities, perhaps daily.

337
338 Dr. Palmer asked if UVA might continue to use Black Bear with the RSWA doing its own waste
339 separately.

340
341 Mr. Mawyer replied that he thinks they would be big enough to take UVA's product but won't
342 be able to store food waste for extended periods at Moores Creek.

343
344 Mr. Silman added that the costs of UVA's food waste stream compared to McIntire's food waste
345 stream are different and that perhaps Ivy could be looked at for the processing of co-mingled
346 material instead of paying a hauler to take it away.

347
348 Mr. Mawyer agreed that this would be a good start.

349
350 Dr. Palmer asked why they are not currently taking the materials that come to McIntire to
351 Crimora along with UVA's stuff.

352
353 Mr. Mawyer replied that they put it out to bid and expected Black Bear to be the low bidder, in
354 which case they would have taken it to Crimora. However, NOPE was the low bidder and
355 continues to use Waverly.

356
357 Dr. Palmer remarked that it will be interesting to see how they balance greenhouse gas emissions
358 from transportation versus the low bidder, though she does not know how to calculate this and
359 asked if any of the professionals are able to.

360
361 Mr. Mawyer remarked that they rely on the Board to make these policy decisions regarding
362 sustainability vs. financial alternatives.

363
364 Ms. Galvin noted that VDOT does not take the costs of alternative modes of transportation into
365 account and this is part of a cultural issue statewide. She stated she is interested in learning how
366 this can be integrated with what the City is doing.

367
368 Mr. Mawyer emphasized that volume is the key to running a facility without a huge deficit and
369 that without sufficient volume they are better off having the waste hauled away. He noted that
370 Spotsylvania County has built a \$17M composting facility that accepts bio-solids and Rivanna
371 has been in discussion with their public facilities director, though it appears it would be more
372 expensive than taking bio-solids to McGill.

373
374 Ms. Galvin wondered why they are more expensive.

375
376 Mr. Mawyer responded that he is not sure but he has told the public facilities director in
377 Spotsylvania that he has the highest prices and the director responded that they would reconsider.

378
379 Dr. Palmer suggested the County and City consider the costs of greenhouse gas emissions and
380 the tradeoffs, though she doesn't know how this could be calculated.

381
382 Mr. Silman stated there will be hundreds of opportunities to make investments in reducing their
383 carbon footprint and agreed that they should calculate these costs.

Mr. Mawyer stated they are trying to conduct an alternative analysis from a financial standpoint and will need to integrate parameters of sustainability.

Ms. Galvin remarked that she doesn't recall that the Board has ever held a work session on the topic of a cost/benefit analysis of reducing emissions.

Mr. Mawyer replied that they can do this and get some people to help. He stated they will discuss the financial and sustainability aspects of bio-solids in a few minutes during the RWSA meeting and in the coming months they will discuss the financial and sustainability aspects of the co-generation of electricity and the burning of methane gas.

Ms. Galvin asked when they will find out if they will receive a permit to place solar panels on the landfill.

Mr. McKalips replied that the application to Dominion was made at the end of August and they expect the winners to be announced in January.

Dr. Palmer observed that the aim of the program is landfill diversion and asked how far along they are in the discussion of the costs and tradeoffs with greenhouse gas emissions.

Ms. Riddervold replied that, to a large extent, this is the intention of a study like this, to weigh fiduciary goals with sustainability. She stated they want the consultant to provide three practical ways for consideration over a five to ten-year time horizon.

Dr. Palmer asked if they are doing more of an inventory or lifecycle evaluation of these issues.

Ms. Riddervold replied that they will ask for the consultant to provide an effective way of looking at those metrics. She proposed that they hold focus groups on this topic, if the Board is interested.

Dr. Palmer expressed her support for this.

9. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA

There were none presented.

10. CLOSED MEETING

There was no closed meeting held.

11. ADJOURNMENT

At 2:56 p.m., Dr. Palmer moved that the meeting be adjourned. She was seconded by Mr. Richardson and the motion passed unanimously (7-0).



**RIVANNA WATER & SEWER AUTHORITY
RIVANNA SOLID WASTE AUTHORITY
BOARD OF DIRECTORS**

Joint Resolution of Appreciation for Kathy Galvin

WHEREAS, Ms. Galvin has served as a member of the Board of Directors for the Rivanna Water & Sewer Authority and the Rivanna Solid Waste Authority since November 2011; and

WHEREAS, over that same period Ms. Galvin has demonstrated leadership in water and sewer, solid waste and recycling services; and has been a valuable member of the Boards of Directors and a resource to the Authorities; and

WHEREAS, Ms. Galvin's understanding of the water, sewer, solid waste and recycling operations of the City of Charlottesville, the Water & Sewer Authority and the Solid Waste Authority has supported a strategic decision-making process that provided benefits to the customers served by the City of Charlottesville as well as the community as a whole. During Ms. Galvin's tenure and through her efforts, major projects were completed including:

- the Ragged Mountain Reservoir Dam
- the Rivanna Sewer Pumping Station
- Odor Control Improvements at the Moores Creek Advanced Water Resource Recovery Facility
- Granular Activated Carbon Filters for all water treatment plants
- a Refuse Transfer Station at the Ivy Material Utilization Center
- a Strategic Plan for both Authorities; and

WHEREAS, the Board of Directors of the Water & Sewer Authority and the Solid Waste Authority are most grateful for the professional and personal contributions Ms. Galvin has provided to both Authorities and to the community; and

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Rivanna Water & Sewer Authority and the Rivanna Solid Waste Authority recognize, thank, and commend Ms. Galvin for her distinguished service, efforts, and achievements as a member of the Rivanna Water & Sewer Authority and the Rivanna Solid Waste Authority, and present this Resolution as a token of esteem, with their best wishes in her future endeavors.

BE IT FURTHER RESOLVED that this Resolution be entered upon both the permanent Minutes of the Rivanna Water & Sewer Authority and the Rivanna Solid Waste Authority.

Michael Gaffney, Chairman
Jeff Richardson
Tarron Richardson
Liz Palmer
Gary O'Connell
Lauren Hildebrand
Paul Oberdorfer
Lance Stewart



MEMORANDUM

**TO: RIVANNA SOLID WASTE AUTHORITY
BOARD OF DIRECTORS**

FROM: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: EXECUTIVE DIRECTOR'S REPORT

DATE: NOVEMBER 19, 2019

STRATEGIC PLAN GOAL: WORKFORCE DEVELOPMENT

Staff Recruitment

Our recruitment process for new employees was expanded to include the Church of the Incarnation and the Sin Barreras (without barriers) organization in an effort to diversify our workforce.

Staff Safety and Training

With instruction from the Charlottesville Fire Department, we sponsored Fire Extinguisher training attended by 14 of our employees.

STRATEGIC PLAN GOAL: COMMUNICATION & COLLABORATION

Community Outreach

Phil McKalips, Director of Solid Waste, gave a presentation on recycling and composting to a group of residents at the ECO Village.

STRATEGIC PLAN GOAL: ENVIRONMENTAL STEWARDSHIP; SOLID WASTE SERVICES

Use of the Ivy Materials Utilization Center:

September 2019

Vehicles
4355

AVG MSW & CDD Tons/Day
105

October 2019

Vehicles
4551

AVG MSW & CDD Tons/Day
105

Fall Household Hazardous Waste, Bulky Waste Amnesty and e-Waste Collection Days were a success.

HHW

489 County Vehicles

131 City Vehicles

6 Nelson Vehicles

Bulky Waste

	County	City
Furniture/Mattresses	167 Vehicles 26,320 lbs	23 Vehicles 3,600 lbs
Appliances	130 Vehicles 8420 lbs / 112 freon units	26 Vehicles 1720 lbs / 25 freon units
Tires	119 Vehicles	13 Vehicles
44.77 tons		

E-Waste

212 County Vehicles

39 City Vehicles

National Recycling Day, November 15

Solid Waste staff handed a recycled, reusable shopping bag to customers at the McIntire Recycling Center to celebrate this event.

Pumpkin Recycling

A “Pumpkin Smash” at the McIntire Recycling Center was held on Saturday, November 2, to collect pumpkins for composting.

Regional Glass Recycling Pilot Program

We are pursuing VDEQ approval to sponsor a regional glass recycling program with other localities including Greene and Nelson Counties. Our plan is to increase glass recycling by providing a greater supply of material to regional glass processing vendors. This pilot program may provide a small increase in recycling revenue.

STRATEGIC PLAN GOAL: OPERATIONAL OPTIMIZATION; SOLID WASTE SERVICES

Holiday Closing Schedule for Calendar 2020

The IMUC, McIntire Recycling Center and the Paper Sort Facility will be closed on the following days in 2020:

January 1	New Year's Day
May 25	Memorial Day
July 4	Independence Day
September 7	Labor Day
October 29 (1/2 day)	Employee Appreciation Day
November 26	Thanksgiving Day
December 25	Christmas Day

STRATEGIC PLAN GOAL: INFRASTRUCTURE AND MASTER PLANNING

Master Plan for the Paper Sort Facility

A consultant is reviewing the capacity of the existing site and facility, located off Meade Ave, and accommodation of future recycling program space needs. The review will be completed by January.

Compostable Food Waste Loading Facility, Moores Creek

A consultant is evaluating facility improvements needed to combine compostable food waste and biosolids for shipment in our trailer to a compost facility.

Recycling Convenience Center, IMUC

Design is in progress for a recycling convenience facility. Construction is scheduled to begin in March and be completed by June.



MEMORANDUM

**TO: RIVANNA SOLID WASTE AUTHORITY
BOARD OF DIRECTORS**

**FROM: LONZY WOOD, DIRECTOR OF FINANCE AND
ADMINISTRATION**

REVIEWED: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: OCTOBER 2019 FINANCIAL SUMMARY

DATE: NOVEMBER 19, 2019

The results of operations and remediation activities for the first four months of this fiscal year are summarized below and in the attached statements.

	<u>Operating Results</u>	<u>Remediation Results</u>	<u>Total</u>
Total Revenues	\$ 851,340	\$ -	\$ 851,340
Total Expenses	<u>(1,179,976)</u>	<u>(242,052)</u>	<u>(1,422,028)</u>
Net operating results	(328,636)	(242,052)	(570,688)
Support - MOU & Local	<u>610,542</u>	<u>575,282</u>	<u>1,185,824</u>
Surplus/(Deficit)*	<u>\$ 281,906</u>	<u>\$ 333,230</u>	<u>\$ 615,136</u>

* Cash reserves are used when deficits occur. (Use of up to \$390,000 in reserves for an expected shortfall for remediation was included in FY 2020 budget.)

Total operating revenues through October were \$201,400 over budget, and total operating expenses were \$141,400 over budget. The Authority has processed 17,010 tons of waste so far this fiscal year. A breakdown of net revenue or cost per ton, including overhead and administrative support costs, is shown below.

	<u>Ivy MSW</u>	<u>Ivy - All Other</u>	<u>Recycling</u>	<u>Total</u>
Tonnage	10,490	5,775	745	17,010
Net operating revenue (costs)	\$ (115,637)	\$ (32,107)	\$ (180,892)	\$ (328,636)
Net revenue (cost) per ton	\$ (11.02)	\$ (5.56)	\$ (242.81)	\$ (19.32)

Attachments

Target Rate: 33.33%

<u>Operations</u>	Budget	Actual Y-T-D	IVY OPERATIONS		MSW-IVY TRANSFER		RECYCLE OPERATIONS		ADMIN. SERVICES	
			Budget	Actual Y-T-D	Budget	Actual Y-T-D	Budget	Actual Y-T-D	Budget	Actual Y-T-D
REVENUES										
Ivy Operations Tipping Fees	\$ 199,400	128,690	\$ 199,400	128,690						
Ivy MSW Transfer Tipping Fees	1,290,540	591,753			1,290,540	591,753				
Material & Other Sales-Ivy	123,500	37,933	123,500	37,933						
Recycling Revenues	200,900	37,719					200,900	37,719		
Other Revenues	93,000	32,303			93,000	32,303				
Interest & Fees	42,600	22,942							42,600	22,942
Total Revenues	\$ 1,949,940	\$ 851,340	\$ 322,900	\$ 166,623	\$ 1,383,540	\$ 624,056	\$ 200,900	\$ 37,719	\$ 42,600	\$ 22,942
Budget vs. Actual*		43.66%		51.60%		45.11%		18.77%		53.85%
EXPENSES										
Ivy Operations	337,846	140,966	337,846	140,966						
Ivy MSW Transfer	1,768,602	681,930			1,768,602	681,930				
Recycling Operations	531,656	172,400					531,656	172,400		
Administration	726,629	253,996							726,629	253,996
Total Expenses	3,364,733	1,249,292	337,846	140,966	1,768,602	681,930	531,656	172,400	726,629	253,996
Budget vs. Actual*		37.13%		41.72%		38.56%		32.43%		34.96%
Net Results Before Administrative Allocation	\$ (1,414,793)	\$ (397,952)	\$ (14,946)	\$ 25,657	\$ (385,062)	\$ (57,874)	\$ (330,756)	\$ (134,681)	\$ (684,029)	\$ (231,054)
Administrative allocations:										
Administrative costs to Envir. MOU (below)	205,209	69,316							205,209	69,316
Administrative costs to Operations	-	-	(171,007)	(57,763)	(171,007)	(57,763)	(136,806)	(46,211)	478,820	161,738
Net Operating Income (Loss)	\$ (1,209,584)	\$ (328,636)	\$ (185,953)	\$ (32,107)	\$ (556,069)	\$ (115,637)	\$ (467,562)	\$ (180,892)	\$ -	\$ -
Other Funding Sources										
Local Government Contributions	1,160,554	610,542								
County Contribution - Capital Grant	-	-								
Transfer to Capital Fund - Transfer Station	-	-								
Surplus (Deficit) - Operations	\$ (49,030)	\$ 281,906								

<u>Environmental Programs</u>		
	Budget	Actual Y-T-D
REVENUES		
Remediation Support	1,070,582	575,282
Total Revenues	1,070,582	575,282
Budget vs. Actual*		53.74%
EXPENSES		
Ivy Environmental	863,374	172,736
Administrative Allocation	205,209	69,316
	1,068,583	242,052
Budget vs. Actual*		22.65%
Cash Reserves Used	390,000	-
Surplus (Deficit) - Environmental	\$ 391,999	\$ 333,230
Total Surplus (Deficit)	\$ 342,969	\$ 615,136

Rivanna Solid Waste Authority
Monthly Financial Status Report
FY 2020

	July	August	September	October	Year-to-Date
<u>Revenues</u>					
Ivy Operations Tipping Fees	\$ 32,267	\$ 31,531	\$ 27,841	\$ 37,051	\$ 128,690
Ivy MSW Transfer Tipping Fees	141,391	142,721	145,387	162,254	591,753
Ivy Material Sales	9,769	11,342	10,663	6,159	37,933
Recycling	14,209	10,578	4,469	8,462	37,719
Other Revenues	9,624	8,407	7,372	6,900	32,303
Remediation Support	79,982	87,916	247,650	159,734	575,282
Interest & Late Fees	5,751	5,861	5,711	5,620	22,942
Total Revenues	\$ 292,993	\$ 298,356	\$ 449,093	\$ 386,180	\$ 1,426,622
<u>Expenses</u>					
Ivy Operations	\$ 30,686	\$ 47,887	\$ 24,521	\$ 37,873	\$ 140,966
Ivy Environmental	23,419	33,521	58,616	57,180	172,736
Ivy MSW Transfer	171,245	102,574	169,468	238,643	681,930
Recycling Operation	43,486	50,059	36,921	41,934	172,400
Administration	58,374	54,319	66,132	75,171	253,996
Total Expenses	\$ 327,210	\$ 288,360	\$ 355,657	\$ 450,800	\$ 1,422,028
Net Operating Income (Loss)	\$ (34,218)	\$ 9,996	\$ 93,436	\$ (64,620)	\$ 4,594
<u>Other Funding Sources</u>					
Local Government Contributions	\$ -	\$ 35,067	\$ 270,204	\$ 305,271	\$ 610,542
<u>Use of Cash Reserves</u>	-	-			-
Surplus (Deficit)	\$ (34,218)	\$ 45,063	\$ 363,640	\$ 240,651	\$ 615,136

Rivanna Solid Waste Authority
Monthly Cash Flow Report
FY 2020

	July	August	September	October
Net Operating Income	\$ (34,218)	\$ 9,996	\$ 93,436	\$ (64,620)
Adjustments for cash flow purposes to show funds available for operations:				
Local Government Contributions	-	35,067	270,204	305,271
(Increase) decrease in accounts receivable	(14,973)	79,981	(26,872)	5,486
Increase (decrease) in accounts payable	(100,691)	(159,467)	39,458	31,632
Capital reserve fund interest not available in operating cash	(2,067)	(2,036)	(1,917)	(1,940)
Trust fund interest not available in operating cash	(252)	(255)	(242)	(227)
 Increase (Decrease) in Operating Cash	 \$ (152,201)	 \$ (36,714)	 \$ 374,066	 \$ 275,603
Operating Cash Balance - Beginning	2,198,460	2,046,259	2,009,545	2,383,611
Operating Cash Balance - Ending	<u>\$ 2,046,259</u>	<u>\$ 2,009,545</u>	<u>\$ 2,383,611</u>	<u>\$ 2,659,214</u>

**Rivanna Solid Waste Authority
Fiscal Year 2020
October 2019**

Revenue Detail Report

Revenue Line Item	Tonnage	
	Budget FY 2020	Actual YTD
IVY TIPPING FEES		
Clean Fill Material	6,500	4,093
Grindable Vegetative Material	2,100	1,471
Pallets	-	21
Tires, Whole	90	6
Tires/White Good (per item)		
<i>Subtotal</i>	8,690	5,591
IVY TRANSFER STATION		
Compost Services	430	179
MSW Transfer Station	23,000	10,490
<i>Subtotal</i>	23,000	10,490
MATERIAL SALES - IVY		
Encore		
Metals		
Wood Mulch & Chips		
Hauling Fees		
Other Materials		
<i>Subtotal</i>		
RECYCLING		
Material Sales		
Other Materials & Services		
Grants-Operating		
Hauling Fees		
<i>Subtotal</i>		
OTHER REVENUES		
Service Charge Fees		
Other Revenues		
REMEDIATION SUPPORT		
UVA Contribution		
County Contribution		
City Contribution		
<i>Subtotal</i>		
INTEREST, LATE FEES, OTHER		
Trust Fund Interest		
Finance Charges		
Capital Reserve Fund Interest		
Operating Investment Interest		
<i>Subtotal</i>		
Total	31,690	16,080

Revenue				
Budget FY 2020	Budget YTD	Actual YTD	Budget vs. Actual	Variance %
\$ 65,000	\$ 21,667	\$ 40,802	\$ 19,135	88.32%
100,800	33,600	71,838	38,238	113.80%
-	-	991	991	
17,100	5,700	1,174	(4,526)	-79.40%
16,500	5,500	13,885	8,385	152.45%
\$ 199,400	\$ 66,467	\$ 128,690	\$ 62,223	93.62%
\$ 76,540	\$ 25,513	\$ 31,823	\$ 6,310	24.73%
1,214,000	404,667	559,930	155,263	38.37%
\$ 1,290,540	\$ 430,180	\$ 591,753	\$ 161,573	37.56%
\$ 20,000	\$ 6,667	\$ 7,517	\$ 850	12.76%
40,000	13,333	15,107	1,774	13.30%
23,000	7,667	9,609	1,942	25.33%
40,000	13,333	5,700	(7,633)	-57.25%
500	167	-	(167)	-100.00%
\$ 123,500	\$ 41,167	\$ 37,933	\$ (3,234)	-7.86%
\$ 162,000	\$ 54,000	\$ 37,467	\$ (16,533)	-30.62%
6,300	2,100	252	(1,848)	-88.00%
29,000	9,667	-	(9,667)	-100.00%
3,600	1,200	-	(1,200)	-100.00%
\$ 200,900	\$ 66,967	\$ 37,719	\$ (29,248)	-43.68%
\$ 85,000	\$ 28,333	\$ 29,910	\$ 1,577	5.56%
8,000	2,667	2,393	(274)	-10.26%
\$ 93,000	\$ 31,000	\$ 32,303	\$ 1,303	4.20%
\$ 79,982	\$ 26,661	\$ 79,982	\$ 53,321	200.00%
638,937	212,979	319,468	106,489	50.00%
351,663	117,221	175,832	58,611	50.00%
\$ 1,070,582	\$ 356,861	\$ 575,282	\$ 218,421	61.21%
\$ 2,000	\$ 667	\$ 976	\$ 310	46.43%
600	200	1,570	1,370	684.78%
15,000	5,000	7,960	2,960	59.19%
25,000	8,333	12,437	4,103	49.24%
\$ 42,600	\$ 14,200	\$ 22,942	\$ 8,742	61.56%
\$ 3,020,522	\$ 1,006,841	\$ 1,426,622	\$ 419,781	41.69%

Rivanna Solid Waste Authority Historical Material Tonnage Report - Recycling Fiscal Years 2016-2020
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Fiscal Year 2016	Fiscal Year 2017	Fiscal Year 2018	Fiscal Year 2019	Fiscal Year 2020 (Jul-Oct)
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In U.S. Tons

Fiber Products

Newspaper, magazines, catalogs
Cardboard (corrugated)
Mixed paper and phone books
File stock (office paper)

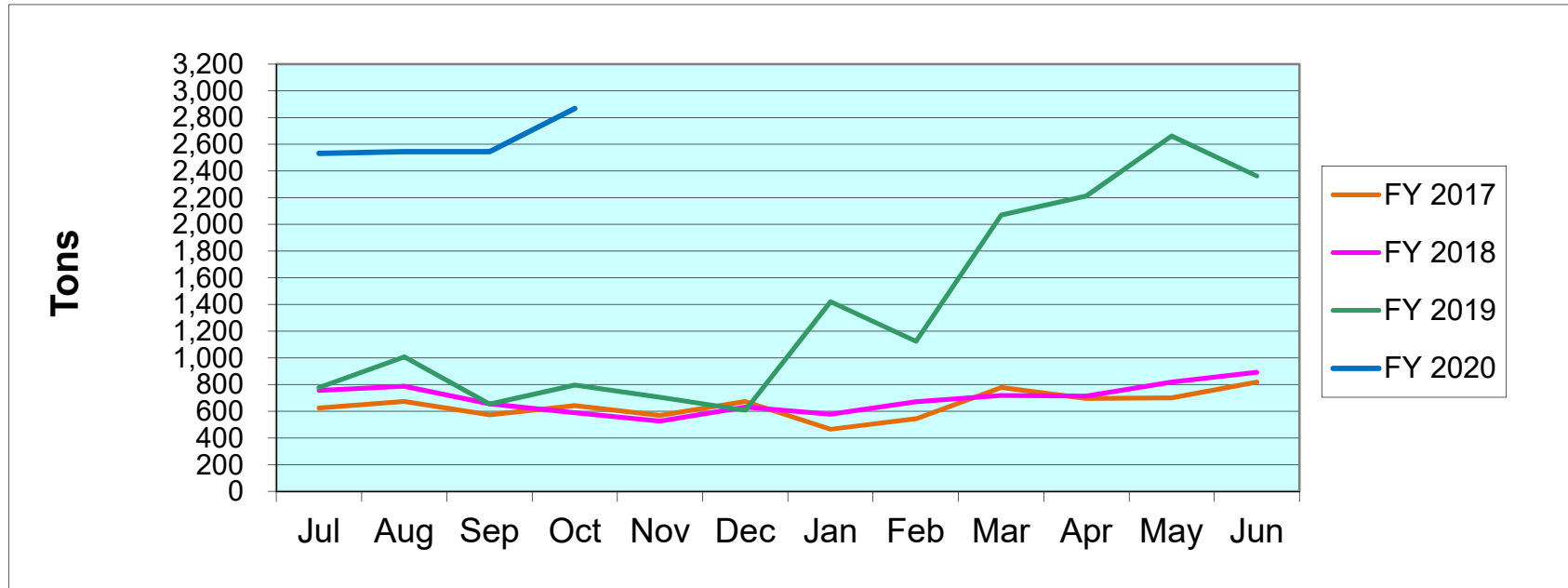
512	419	424	427	72
459	812	763	807	208
214	156	187	265	224
125	122	111	128	42
Total Fiber Products	1,310	1,509	1,485	1,627

Other Products

Glass
Metal Cans
Plastic

191	252	252	411	138
32	31	41	58	18
82	86	103	127	43
Total Other Products	305	369	396	596
Total	1,615	1,878	1,881	2,223

**Rivanna Solid Waste Authority
Ivy MSW Transfer Tonnages
FY 2017 - 2020**





MEMORANDUM

**TO: RIVANNA SOLID WASTE AUTHORITY
BOARD OF DIRECTORS**

**FROM: DAVID RHOADES, SOLID WASTE MANAGER;
PHILLIP MCKALIPS, DIRECTOR OF SOLID WASTE**

REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR

**SUBJECT: IVY MATERIAL UTILIZATION CENTER REPORT/
RECYCLING OPERATIONS UPDATE**

DATE: NOVEMBER 19, 2019

Ivy Material Utilization Center (IMUC) : DEQ Permit 132: 300 tons/day MSW limit

September 2019

- **4,355 vehicles crossed the scales**
- The IMUC transfer station operated 24 days and received a total of 2,545.38 tons of municipal solid waste (MSW), an average of 106.06 tons per day of operation. The monthly transfer station tonnage figures are attached to this report.
- 1,097.80 tons of non-MSW materials were received
- 3,643.18 tons were received as a combined total tonnage (MSW + non-MSW)

October 2019

- **4,551 vehicles crossed the scales**
- The IMUC transfer station operated 27 days and received a total of 2,868.54 tons of municipal solid waste (MSW), an average of 106.24 tons per day of operation. The monthly transfer station tonnage figures are attached to this report.
- 1,571.47 tons of non-MSW materials were received
- 4,440.01 tons were received as a combined total tonnage (MSW + non-MSW)

Paint Collection:

On October 7, 2019, the Ivy MUC shipped out the 25th container of paint cans since the program began in August 2016. Each container holds about 4,200 one-gallon paint cans, therefore, we have shipped about 105,000 paint cans. This program continues to make paint disposal more convenient for residents and alleviates some of the congestion during our fall and spring Household Hazardous Waste Days.

The oil-based paints that are collected are beneficially used as fuel for heat recovery and the latex paints are re-processed back into commercial paints (www.latexpaintrecycling.com).

Compostable Food Waste Collection:

This program continues to operate smoothly at the IMUC. This service is free to County residents. A similar bin has been placed at the Transfer Station for the receipt of compostable food wastes from commercial customers. Commercial customers are charged the established disposal fee of \$178 per ton.

The McIntire Recycle Center received 5.91 tons of compostable materials residents in September. The McIntire Recycle Center received 4.50 tons of compostable materials residents in October.

Fall HHW and Bulky Waste Totals:

Thursday, September 26, Friday, September 27, and Saturday, September 28, 2019: *Special Collections*

The Conditionally Exempt Small Quantity Generator (CESQG) Special Collection for business hazardous waste was held on Thursday, September 26, 2019. CESQG collection program is a pre-registration, fee-based program with sign-up information and instructions on the Rivanna.org website.

Household Hazardous Waste Day was a two-day event this Fall. Hours were from 9am-2pm on both Friday, September 27 and Saturday, September 28, 2019. Wait times on both days this spring was less than 10 minutes. The total customer count for the two-day event was 626 City/County residents. Friday: the split was 248 County, and 66 City. Saturday: the split was 241 County and 65 City. 6 Nelson county residents participated.

Saturday, October 5, 2019: *Furniture / Mattresses*

A total of 190 vehicles participated, including 167 from the County and 23 from the City. 26,320 lbs. of furniture and mattresses was collected from the county. 3,600 lbs. of furniture and mattresses was collected from the City.

Saturday, October 12, 2019: *Appliances*

A total of 156 vehicles participated, including 130 from the County and 26 from the City. 8,420 lbs. of appliances and 112 freon units were collected from the County. 1720 lbs. of appliances and 25 freon units were collected from the City.

Saturday, October 19, 2019: Tires

A total of 132 vehicles participated, including 119 from the County and 13 from the City. A total of 44.77 tons of tires were received, separated, and trucked to end user for recycling.

Saturday, October 26, 2019: E-waste

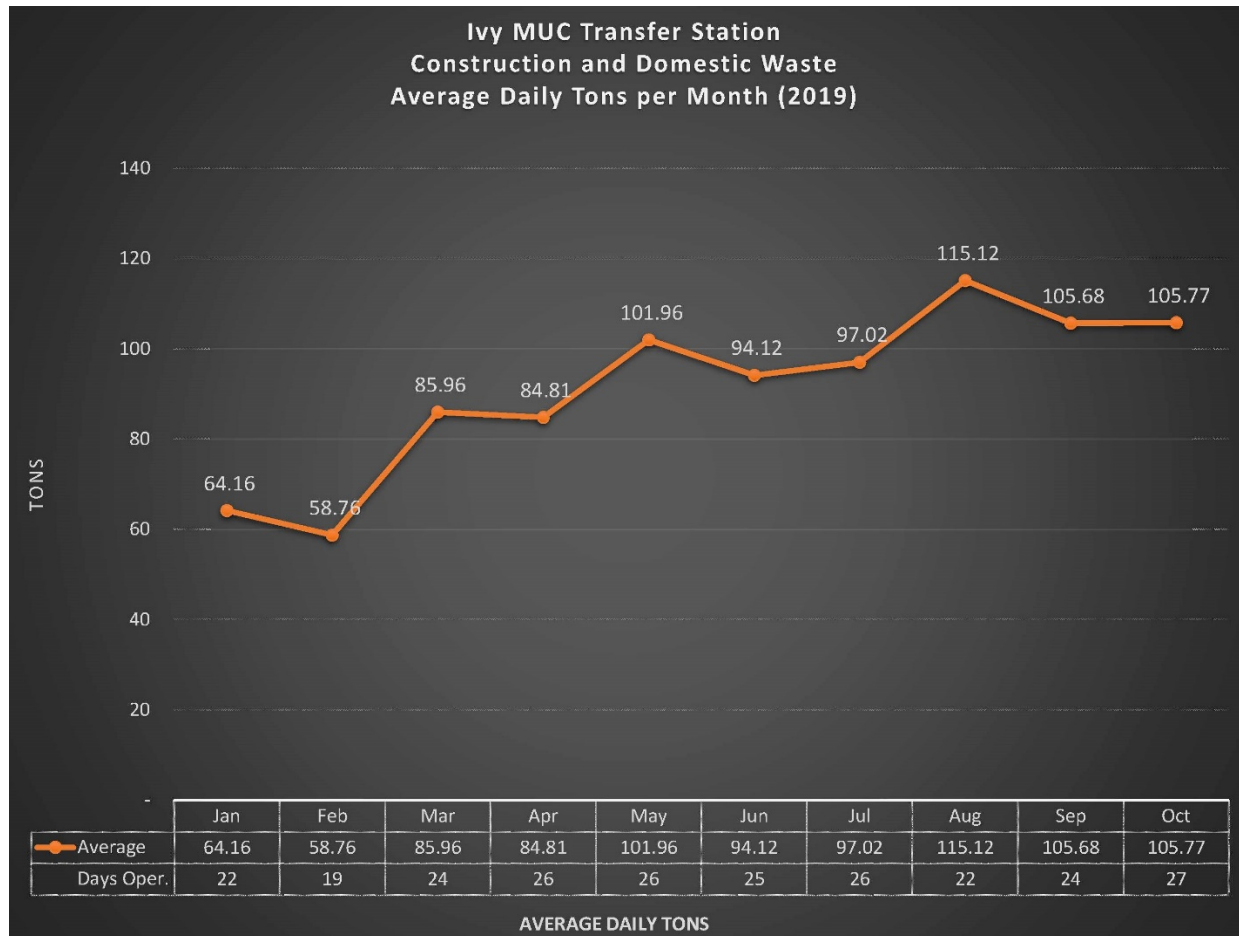
A total of 251 vehicles participated, including 212 from the County and 39 from the City

Alpha Phi Omega Service Volunteers:

UVA's Theta chapter of the Alpha Phi Omega service group volunteered on Saturday, November 2, 2019 at The Ivy MUC. The team collected trash from Dick Woods Rd to Interstate 64.

Transfer Station Update

As shown on the following figure, we continue to see strong numbers in the tonnages being processed at the Transfer Station. Of note is that Monday operations began on March 18. The 5 days the facility was closed due to the fire at the transfer station are not included in the August averages.



Ivy Material Utilization Center
Daily Scale Crossing Data



September 1-30, 2019

Days of

Operation: 24

Operation: 24		MSW collected at Transfer Station (tons)						Non-MSW
		Vehicles	Count	Citizen-Can	Construction	Domestic	MSW Total	Total Tons
09/01/19	Sunday	-	-	-	-	-	-	-
09/02/19	Monday	-	-	-	-	-	-	-
09/03/19	Tuesday	231	268	0.41	32.66	82.20	115.27	91.98
09/04/19	Wednesday	186	198	0.38	25.52	96.05	121.95	28.15
09/05/19	Thursday	192	202	0.38	110.94	51.36	162.68	24.94
09/06/19	Friday	185	183	0.17	29.89	69.46	99.52	83.07
09/07/19	Saturday	278	324	0.64	5.89	39.30	45.83	8.42
09/08/19	Sunday	-	-	-	-	-	-	-
09/09/19	Monday	137	149	0.06	39.86	73.81	113.73	17.32
09/10/19	Tuesday	182	203	0.23	58.17	68.00	126.40	63.40
09/11/19	Wednesday	157	187	0.17	56.02	66.53	122.72	44.99
09/12/19	Thursday	153	180	0.25	67.36	61.71	129.32	57.61
09/13/19	Friday	182	199	0.25	38.86	58.10	97.21	80.02
09/14/19	Saturday	198	248	0.69	12.48	24.65	37.82	6.47
09/15/19	Sunday	-	-	-	-	-	-	-
09/16/19	Monday	120	176	0.18	40.60	69.94	110.72	28.24
09/17/19	Tuesday	188	225	0.44	62.79	37.03	100.26	102.67
09/18/19	Wednesday	172	210	0.20	55.14	68.21	123.55	31.20
09/19/19	Thursday	163	188	0.25	97.64	70.01	167.90	41.97
09/20/19	Friday	167	164	0.21	34.74	59.54	94.49	32.29
09/21/19	Saturday	258	301	0.62	16.81	29.62	47.05	19.43
09/22/19	Sunday	-	-	-	-	-	-	-
09/23/19	Monday	125	124	0.04	32.90	83.66	116.60	13.80
09/24/19	Tuesday	167	221	0.37	51.26	59.42	111.05	23.19
09/25/19	Wednesday	165	172	0.25	51.44	67.51	119.20	52.91
09/26/19	Thursday	170	200	0.27	72.39	59.10	131.76	77.45
09/27/19	Friday	213	212	0.33	45.14	69.85	115.32	132.91
09/28/19	Saturday	253	358	2.13	9.74	30.98	42.85	13.27
09/29/19	Sunday	-	-	-	-	-	-	-
09/30/19	Monday	113	124	0.18	27.23	64.77	92.18	22.10
Total		4,355	5,016	9.10	1,075.47	1,460.81	2,545.38	1,097.80
Average		181	209	0.38	44.81	60.87	106.06	45.74
Median		177	200	0.25	40.23	65.65	114.50	31.75
Maximum		278	358	2.13	110.94	96.05	167.90	132.91
Minimum		113	124	0.04	5.89	24.65	37.82	6.47

Material Type & Description

Citizen-Can: Roll-off container at the Ivy MUC Convenience Center-citizens dispose of prepaid trashbags

Construction: Construction/demolition debris (shingles, sheetrock, treated lumber, etc.)

Count: Transactions per item (appliances, hauling fees, service fees, tag-bag stickers, tires)

Domestic: Business/residential general or household waste

MSW: Materials processed/handled at the Transfer Station

Non-MSW: Materials processed/handled on-site

Vehicle: Transactions or vehicles processed in a day

Ivy Material Utilization Center
Daily Scale Crossing Data



October 1-31, 2019

Days of

Operation: 27

Operation: 27		MSW collected at Transfer Station (tons)						Non-MSW
		Vehicles	Count	Citizen-Can	Construction	Domestic	MSW Total	Total Tons
10/01/19	Tuesday	177	196	0.34	42.43	49.88	92.65	33.26
10/02/19	Wednesday	153	212	0.30	45.20	64.97	110.47	39.12
10/03/19	Thursday	147	158	0.18	32.42	63.41	96.01	69.02
10/04/19	Friday	211	227	0.32	52.34	64.49	117.15	83.10
10/05/19	Saturday	240	301	0.90	20.36	28.77	50.03	7.22
10/06/19	Sunday	-	-	-	-	-	-	-
10/07/19	Monday	140	149	0.05	52.10	83.11	135.26	57.58
10/08/19	Tuesday	214	223	0.51	90.94	67.77	159.22	113.92
10/09/19	Wednesday	164	176	0.30	33.23	77.09	110.62	49.07
10/10/19	Thursday	166	201	0.30	48.00	55.03	103.33	45.62
10/11/19	Friday	182	207	0.26	24.68	55.43	80.37	103.72
10/12/19	Saturday	276	358	0.68	15.38	33.23	49.29	4.51
10/13/19	Sunday	-	-	-	-	-	-	-
10/14/19	Monday	108	126	0.27	30.17	78.61	109.05	4.33
10/15/19	Tuesday	188	194	0.27	42.51	51.92	94.70	13.65
10/16/19	Wednesday	97	96	0.22	53.55	67.50	121.27	0.82
10/17/19	Thursday	119	150	0.38	20.19	58.61	79.18	9.78
10/18/19	Friday	204	270	0.26	60.23	81.04	141.53	84.50
10/19/19	Saturday	220	269	0.67	27.70	30.82	59.19	10.15
10/20/19	Sunday	-	-	-	-	-	-	-
10/21/19	Monday	112	139	0.22	22.56	105.29	128.07	12.99
10/22/19	Tuesday	117	114	0.24	41.72	59.14	101.10	72.75
10/23/19	Wednesday	188	365	0.53	64.15	94.12	158.80	46.47
10/24/19	Thursday	145	148	0.30	45.63	65.14	111.07	94.94
10/25/19	Friday	195	197	2.65	62.22	66.19	131.06	183.89
10/26/19	Saturday	198	237	0.22	34.51	28.62	63.35	2.94
10/27/19	Sunday	-	-	-	-	-	-	-
10/28/19	Monday	144	155	0.18	44.97	85.66	130.81	190.43
10/29/19	Tuesday	197	258	0.34	80.64	66.94	147.92	98.29
10/30/19	Wednesday	187	237	0.35	51.96	81.83	134.14	81.33
10/31/19	Thursday	62	57	1.38	16.39	35.13	52.90	58.09
Total		4,551	5,420	12.62	1,156.18	1,699.74	2,868.54	1,571.47
Average		169	201	0.47	42.82	62.95	106.24	58.20
Median		177	197	0.30	42.51	64.97	110.47	49.07
Maximum		276	365	2.65	90.94	105.29	159.22	190.43
Minimum		62	57	0.05	15.38	28.62	49.29	0.82

Material Type & Description

Citizen-Can: Roll-off container at the Ivy MUC Convenience Center-citizens dispose of prepaid trashbags

Construction: Construction/demolition debris (shingles, sheetrock, treated lumber, etc.)

Count: Transactions per item (appliances, hauling fees, service fees, tag-bag stickers, tires)

Domestic: Business/residential general or household waste

MSW: Materials processed/handled at the Transfer Station

Non-MSW: Materials processed/handled on-site

Vehicle: Transactions or vehicles processed in a day



MEMORANDUM

**TO: RIVANNA SOLID WASTE AUTHORITY
BOARD OF DIRECTORS**

FROM: BILL MAWYER, EXECUTIVE DIRECTOR

**SUBJECT: AMENDMENT OF BYLAWS TO MODIFY THE MONTHLY
BOARD MEETING SCHEDULE AND APPROVAL OF THE
BOARD MEETING SCHEDULE FOR CALENDAR YEAR 2020**

DATE: NOVEMBER 19, 2019

This proposal is to modify the Solid Waste Board meeting schedule, and propose meeting dates for calendar year 2020. In view of the expanded and improved services being offered and planned for our Solid Waste programs, staff are recommending modifications to the Board meeting schedule.

The current Bylaws, adopted in April 2016, require regular meetings of the Board on the fourth Tuesday of February, April, May, June, August and November (6 meetings/calendar year). The proposed amendment of the Bylaws would establish regular meetings of the Board every other month, (January, March, May, July, September, November; also 6 meetings/year) starting in January 2020. The proposed meeting schedule offers the following benefits:

1. Creates a more consistent schedule to address operational and Capital Improvement business needs, such as timely award of contracts and authorizations for necessary budget amendments, as well as other program and service discussions with the Board.
2. Eliminates the 90-day gaps in Board meetings from August to November, and from November to February, which can impact business efficiencies. May minimize the need for Special Meetings in the second half of the calendar year.
3. Creates a more consistent meeting schedule for Board members and the public.

In accordance with the Bylaws, Article VI, the Board may amend the Bylaws provided that the notice of the proposed amendment is given in the notice of the meeting, and all members of the Board are present at the meeting.

Board Action Requested:

We recommend approval of:

1. An amendment to the RSWA Bylaws to establish regular meetings of the Board of Directors on the fourth Tuesday in January, March, May, July, September and November,

to be effective on January 1, 2020.

2. The Board meeting schedule for calendar 2020 shown by the attachment.

Attachments: RSWA By-Laws, Proposed Effective January 1, 2020
RSWA Board Meeting Schedule for Calendar Year 2020

BY-LAWS OF
RIVANNA SOLID WASTE AUTHORITY
(Proposed Effective January 1, 2020)

ARTICLE I

OFFICES

1. The principal office of the Rivanna Solid Waste Authority (the “Authority”) shall be in Charlottesville or Albemarle County, Virginia, at 695 Moores Creek Lane, Charlottesville, Virginia 22902 or at such particular place as shall be fixed from time to time by resolution of the Board of Directors (the “Board”).

2. Except as otherwise required by resolution of the Board, or as business of the Authority may require, all of the books and records of the Authority shall be kept at the office as designated above.

ARTICLE II

DIRECTORS

1. The Authority shall have a Board of Directors. All corporate powers shall be exercised by or under the authority of, and the business and affairs of the Authority managed under the direction of, its Board of Directors, pursuant to the provisions of the Articles of Incorporation and Sections 15.2-5113 and 5114 of the Code of Virginia. Directors shall be appointed or elected in the manner and for the term set forth in the Articles of Incorporation.

ARTICLE III

OFFICERS

1. The officers of the Authority shall be a Chair, a Vice-Chair, and a Secretary-Treasurer. An election will be held at the regular April Board meeting in even-numbered years

with the duly elected officers assuming office as of May 1 for a term of two years and such officers may succeed themselves indefinitely.

2. The Chair shall be the presiding officer of the Authority. Unless some other person is specifically authorized by procedures or instructions adopted by vote of the Board, and except as otherwise provided in Article III, Section 5 below; the Chair shall sign all contracts and other instruments to be executed on behalf of the Authority. The Chair shall perform all the duties and have such other powers as the Board may from time to time designate. The Chair shall be a member of the Board.

3. The Vice-Chair shall perform all the duties of the Chair in the event of the Chair's absence or incapacitation or in the event of the Chair's office falling vacant and also perform such tasks as the Chair or the Board may assign from time to time. The Vice-Chair shall be a member of the Board.

4. The Secretary-Treasurer or his or her designee shall attend all meetings of the Board and act as secretary or clerk thereof; such person shall record all votes and keep accurate records of all proceedings at such meetings in a minute book to be kept for that purpose, which shall be open at all reasonable times to the inspection of any member or any other person authorized by law. The Secretary-Treasurer or his or her designee shall keep in safe custody the official seal of the Authority and shall have authority to affix such seal to all papers authorized to be executed by the Authority requiring such seal to be affixed. The Secretary-Treasurer shall have authority to cause copies to be made of all minutes and other records and documents of the Authority and to give certificates under the official seal of the Authority to the effect that such copies are true copies, and all persons dealing with the Authority may rely upon such certificates.

The Secretary-Treasurer or his or her designee shall perform all the duties commonly incident to the office of secretary or clerk and shall perform such other duties and have such powers as the Board may from time to time designate. In the absence of the Secretary-Treasurer and/or his or her designee from any meeting of the Board, a temporary secretary may be chosen who shall record the proceedings thereof.

Subject to the provisions of any trust agreement securing revenue bonds, bond anticipation notes, or other financial obligation of the Authority, the Secretary-Treasurer or his or her designee shall have the care and custody of the funds of the Authority and shall have and exercise, under the supervision of the Board, all the powers and duties commonly incident to the office of treasurer. The Secretary-Treasurer shall be selected by the Board and may or may not be a member of the Board.

5. There shall be an Executive Director who shall be the chief administrative officer of the Authority and shall be selected from a list of qualified individuals by vote of the Board. The Executive Director, acting on request of the Chair, shall cause notice to be given of all meetings of the Authority as required by law or by these By-Laws. The Executive Director is authorized to sign contracts to be executed on behalf of the Authority provided: (i) the aggregate amount of the contract is \$100,000 or less; (ii) the term of the contract is one year or less; and (iii) funds required for payment terms of the contract have been authorized by the Board through adoption or amendment of the annual operating budget.

6. In addition to the officers above mentioned, the Board may provide for such deputies, assistants and other officers as it may deem necessary from time to time, who shall perform such duties and have powers as the Board may designate.

ARTICLE IV

MEETINGS OF THE AUTHORITY

1. Meetings of the Board may be called by the Chair, or in the event of the Chair's absence from the Commonwealth or incapacity, by the Vice-Chair, for such time and at such place in the Commonwealth as may be specified in the call.

2. Regular meetings of the Board will be held at the Authority's Administration Building, 695 Moores Creek Lane, Charlottesville, Virginia, at 2:00 p.m. on the fourth Tuesday of January, March, May, July, September and November of each year or at such other place as the Board may designate from time to time. Public notice of such meetings will be required only if the time and/or place of such meetings is changed for any reason.

3. Meetings in addition to the regular meeting may be called by the Chair, or the Vice-Chair when acting for the Chair under the conditions stated above, for such time and at such place in the Commonwealth as may be specified in the call, provided written notice of such meeting is delivered to the Board members, left at their residence or usual place of business, or delivered by electronic mail not less than forty-eight hours prior to the date and time specified for such meeting. In addition, the Executive Director shall take such measures as may be necessary to make sure that news media and the public have at least twenty-four hours notice of any meeting.

4. In the event that the officer issuing the call for a special meeting declares an emergency to exist, the notice required shall be three hours, provided that the declaration of emergency is approved by vote of the Board members at that special meeting.

5. The notification of Board meetings at which subject matter is discussed and/or acted upon by the Authority in compliance with the requirements of Title 15.2, Code of Virginia (Virginia Water and Waste Authorities Act) will be as specified in that document.

6. All Board meetings shall be open to the public, except when pursuant to the provision of Section 2.2-3711 of the Code of Virginia, the Board members have voted to hold a closed meeting and no resolution, rule, contract, regulation, or motion discussed in such closed meeting shall become effective unless the Board members reconvene in open meeting and take a vote on such resolution, rule, contract, regulation, or motion.

7. At meetings of the Board the following order of the business shall be observed, in general, as far as is consistent with the purpose of the meeting:

- a. Reading, correction, and approval of the minutes of the preceding meeting.
- b. Items from the public, except matters on the agenda for which a public hearing has been called, and responses from Board or staff to public comments.
- c. Consent agenda, to include regular staff reports on expenditures, operations, and capital projects.
- d. Other business, including unfinished business.

8. The vote on the adoption of every resolution shall be by ayes and nays. The names of the Board members voting for or against the resolution shall be entered upon minutes of the meetings, unless the vote be unanimous, in which case the minutes will so state.

9. A majority of the members of the Board shall constitute a quorum but the vote of the majority of the total members shall be necessary for any action, other than procedural matters, to be taken by the Board.

10. A Board member may designate an alternate to attend meetings the member is unable to attend. Such alternates may take part in any deliberations of the Board but may not vote on any matter and may be excluded from any closed meeting.

11. A Board member may participate in a Board meeting through electronic communication from a remote location, subject to the conditions of § 2.2-3708.1 of the Code of Virginia and the Board's policy for remote participation as set forth below:

a. At least four hours prior to the scheduled time for the Board meeting, the Board member desiring to participate remotely shall notify the Chair in writing, which may be by e-mail or text message, and shall identify with specificity the nature of the reason as to why remote participation is necessary. Permitted reasons shall be limited to (i) an emergency, (ii) a personal matter, or (iii) a temporary or permanent disability or other medical condition that prevents the member's physical attendance. The specific nature of the reason and the remote location from which the Board member participated shall be recorded in the minutes of the meeting.

b. No Board member may participate remotely in more than one Board meeting per calendar year; provided, however, such limitation shall not apply to remote attendance due to temporary or permanent disability or other medical condition that prevents the Board member's physical attendance.

c. The Authority shall have arranged for the voice of the remote participant to be heard by persons present at the meeting location, including other Board members, and the public. The Authority shall be capable of monitoring the remote connection and record in the minutes both the time the remote participation was connected and the time disconnected, and the minutes shall clearly record the vote of the remote participant on all voting matters during the remote participation.

d. A quorum of Board members shall be physically present at the meeting location in order for Board actions to be considered or taken, however, voting by remote

participation may count toward determining that the majority of members voted for or against a particular action as described in Section 9 of this Article IV.

e. In the event a Board member's remote participation is disapproved by the Chair or the Board because such participation would violate the terms and conditions of this Section 11, such disapproval and the reason therefor shall be recorded in the minutes.

ARTICLE V

OFFICIAL SEAL

The official seal of the Authority shall consist of the embossed impression of a circular metallic disc containing in the outer rim the words "Rivanna Solid Waste Authority." The Secretary-Treasurer or his or her designee shall secure such seal and cause the impression thereof to be made on the minutes of the meetings of the Board.

ARTICLE VI

AMENDMENTS

Except as otherwise provided by law, these By-Laws may be amended, added to, altered, or repealed in whole or in part by the Board at any meeting, provided that notice of the proposed amendment, additions, alteration or repeal is given in the notice of such meeting and that all members of the Board are present at such meeting.

ARTICLE VII

FISCAL YEAR

The fiscal year of the Authority shall be determined in the discretion of the Board, but in the absence of any such determination it shall be the year beginning July 1 and ending June 30.

Proposed November 19, 2019

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Board Meeting Schedule

Listed below are the proposed RSWA Board of Directors meeting dates for calendar year 2020:

Tuesday, January 28, 2020

Tuesday, March 24, 2020

Tuesday, May 26, 2020

Tuesday, July 28, 2020

Tuesday, September 22, 2020

Tuesday, November 17, 2020*

* The November meeting is moved to the third Tuesday of the month to avoid a conflict with the week of Thanksgiving.

RSWA meetings will start promptly at 2:00 p.m. RSWA meetings will be held in the large conference room of the Moores Creek Advanced Water Resource Recovery Facility Administration Building, 695 Moores Creek Lane, Charlottesville, VA.

MEMORANDUM

**TO: RIVANNA SOLID WASTE AUTHORITY
BOARD OF DIRECTORS**

**FROM: LONNIE WOOD, DIRECTOR OF FINANCE AND
ADMINISTRATION**

REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR

**SUBJECT: COMPREHENSIVE ANNUAL FINANCIAL REPORT
FISCAL YEAR ENDING JUNE 30, 2019**

DATE: NOVEMBER 19, 2019

The Authority's Comprehensive Annual Financial Report for the fiscal year ending June 30, 2019 is included with your Board packet. A large part of preparing the financial statements involves having the financial reports audited for the purposes of obtaining an opinion from an independent Certified Public Accountant as to the accuracy of the information presented in the report.

The audit also reviews internal accounting controls and tests for compliance with relevant laws and regulations as a function of expressing the firm's opinion on the financial information. I am pleased to inform you that the Authority received an unmodified opinion, which is the highest opinion that the financial statements are materially accurate and fairly presented.

Mr. Robert Huff, a principal of the Charlottesville office of Robinson, Farmer, Cox Associates, will be at the meeting to give a brief review of the audit and discuss any audit findings the firm may have. A letter communicating several aspects of the review is attached for you as well.

I would also like to thank Kathy Ware, Senior Accountant, who performed much of the detailed work in the preparation of this report. The entire administrative staff deserves our appreciation for their hard work during the year in processing our transactions and their assistance during the audit.

This report will be submitted to the Certification Program of the Government Finance Officers Association.

Attachment: Comprehensive Annual Financial Report
Communication with Those Charged with Governance



ROBINSON, FARMER, COX ASSOCIATES, PLLC

Certified Public Accountants

Communication with Those Charged with Governance

To the Board of Directors Rivanna Solid Waste Authority

We have audited the financial statements of financial statements of Rivanna Solid Waste Authority for the year ended June 30, 2019. Professional standards require that we provide you with information about our responsibilities under generally accepted auditing standards, *Government Auditing Standards*, and Uniform Guidance, as well as certain information related to the planned scope and timing of our audit. We have communicated such information in our letter to you dated July 15, 2019. Professional standards also require that we communicate to you the following information related to our audit.

Significant Audit Matters

Qualitative Aspects of Accounting Practices

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by Rivanna Solid Waste Authority are described in Note 1 to the financial statements. No new accounting policies were adopted and the application of existing policies was not changed during 2019. We noted no transactions entered into by the entity during the year for which there is a lack of authoritative guidance or consensus. All significant transactions have been recognized in the financial statements in the proper period.

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. The most sensitive estimates affecting the Authority's financial statements were:

Management's estimate of the useful lives of depreciable assets is based on industry standards. Pension and OPEB estimates were determined by valuations performed by actuaries. We evaluated the key factors and assumptions used to develop the estimates in determining that they are reasonable in relation to the financial statements taken as a whole.

The financial statement disclosures are neutral, consistent, and clear.

Difficulties Encountered in Performing the Audit

We encountered no significant difficulties in dealing with management in performing and completing our audit.

Corrected and Uncorrected Misstatements

Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are clearly trivial, and communicate them to the appropriate level of management. Management has corrected all such misstatements. In addition, none of the misstatements detected as a result of audit procedures and corrected by management were material, either individually or in the aggregate, to each opinion unit's financial statements taken as a whole.

Disagreements with Management

For purposes of this letter, a disagreement with management is a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditors' report. We are pleased to report that no such disagreements arose during the course of our audit.

Management Representations

We have requested certain representations from management that are included in the management representation letter dated October 25, 2019.

Management Consultations with Other Independent Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to the entity's financial statements or a determination of the type of auditors' opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other accountants.

Other Audit Findings or Issues

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as the entity's auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

Other Matters

We applied certain limited procedures to management's discussion and analysis and the schedules related to pension and OPEB funding, which are required supplementary information (RSI) that supplements the basic financial statements. Our procedures consisted of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We did not audit the RSI and do not express an opinion or provide any assurance on the RSI.

We were not engaged to report on the introductory section or statistical section which accompany the financial statements but are not RSI. Such information has not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on it.

Restriction on Use

This information is intended solely for the use of the Board of Directors and management of Rivanna Solid Waste Authority and is not intended to be, and should not be, used by anyone other than these specified parties.

Robinson, Farmer Cox Associates
(Charlottesville, Virginia)
October 25, 2019

Rivanna Solid Waste Authority



Comprehensive Annual Financial Report

for the Fiscal Years Ended June 30, 2019 and 2018

Serving the City of Charlottesville and Albemarle County, Virginia

Front Cover Photograph

Landfill Gas Flare

RIVANNA SOLID WASTE AUTHORITY
CHARLOTTESVILLE, VIRGINIA
COMPREHENSIVE ANNUAL FINANCIAL REPORT
YEARS ENDED JUNE 30, 2019 AND 2018

Prepared By:

Department of Finance and Administration

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RIVANNA SOLID WASTE AUTHORITY
Comprehensive Annual Financial Report
Fiscal Years Ended June 30, 2019 and 2018

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BOARD MEMBERS

Michael A. Gaffney, Chair

Jeff Richardson, Vice-Chair

Dr. Tarron Richardson, Secretary/Treasurer

Dr. Liz Palmer

Kathleen Galvin

Lance Stewart

Paul Oberdorfer

EXECUTIVE DIRECTOR

William I. Mawyer, Jr., P.E.

DIRECTOR OF FINANCE/ADMINISTRATION

Lonzy E. Wood, III

GENERAL COUNSEL

McGuire Woods, LLP
Charlottesville, Virginia

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October 25, 2019

To the Board of Directors
Rivanna Solid Waste Authority
Charlottesville, Virginia

The Comprehensive Annual Financial Report (CAFR) of the Rivanna Solid Waste Authority (Authority) for the fiscal year end June 30, 2019 is submitted herewith. This report has been prepared in conformity with the reporting and accounting standards promulgated by the Government Accounting Standards Board, the Financial Accounting Standards Board, and with the accounting and reporting standards for enterprise funds set out by the Government Finance Officers Association of the United States and Canada, with such modifications as apply to our status as an independently chartered corporation.

Based upon a comprehensive framework of internal control that it has established for this purpose, management assumes responsibility for the completeness and reliability of the information contained in this report. The objective of internal control is to provide reasonable, rather than absolute, assurance that the financial statements are free of material misstatements, because the cost of each internal control should not outweigh the potential benefit.

Management's discussion and analysis (MD&A) immediately follows the independent auditor's report and provides a narrative introduction, overview, and analysis of the basic financial statements. MD&A complements this letter of transmittal and should be read in conjunction with it.

ORGANIZATION AND SERVICES PROVIDED

The Rivanna Solid Waste Authority is a regional non-profit public corporation chartered in 1990 under the Virginia Water and Waste Authorities Act (1950, as amended), that currently provides solid waste disposal and recycling services to the region comprised of the City of Charlottesville (City) and Albemarle County (County). The Authority does not provide collection services, which are managed by the City's Public Service Division and various private haulers who serve customers in both the County and the City. The Authority operates under the terms of a Service Agreement signed October 6, 1990 by the officers of the City Council, the County Board of Supervisors, and the Authority. By this agreement, the Authority is to be the sole provider of any landfills, transfer stations, or other solid waste disposal facilities, including recycling and solid waste energy generation, for all solid waste generated within Charlottesville and Albemarle County. The Authority accepted donation of the assets and liabilities and assumed operational responsibility for the Ivy Sanitary Landfill as of February 1, 1991.

The Authority has determined that it is not part of the reporting entity of either the City of Charlottesville or the County of Albemarle (see Note 1 of the notes to the financial statements). The Board appoints an Executive Director, who manages Authority operations under its direction. The Authority's operations mainly consist of the Ivy Material Utilization Center (IMUC), Municipal Solid Waste (MSW) transfer station, recycling activities and supporting administrative functions.

LOCAL ECONOMIC CONDITIONS

The University of Virginia provides a significant buffer against large swings in the economy of our service area. In addition, the Charlottesville urban area is a major retail trade center for the surrounding region. Housing growth remains steady. Although the majority of such growth occurs in County developments, in-filling in Charlottesville continues. Both Charlottesville and Albemarle County enjoy low unemployment rates, steady economic growth and high bond ratings.

A ten-year compilation analysis report dated September 2018 by the Charlottesville Regional Chamber of Commerce examining employment in the Greater Charlottesville Region concluded that combined private and public-sector employment grew by 10%, or 11,551 jobs, from 2007 to 2017, compared to a 4.3% increase in Virginia outside of the region. In 2017, 76% of jobs within the Region were located in the City of Charlottesville and Albemarle County, and the other 24% are reported in the Counties of Fluvanna, Greene, Louisa, Nelson, and Orange. The unemployment rate for the Charlottesville Metropolitan Service Area for calendar year 2018 was 2.7%.

The Charlottesville-Albemarle area attracts many visitors to its historic sites and the wine industry has been popular and has served to help benefit the tourism sector of the regional economy. The travel and tourism industry make a vital contribution to the local economy.

LONG-TERM FINANCIAL PLANNING

The Authority is committed to the environmental remediation and post-closure care of the former Ivy Landfill. This challenge is immense in terms of management and economic resources. The next ten-year effort in this area for monitoring and remediation will cost an estimated \$6 o \$7 million.

A memorandum of understanding among the City, the County, the University of Virginia (UVA), and the Authority was signed on January 10, 2005 in which the City, County, and UVA agreed to share in funding the costs of environmental remediation at the former Ivy Landfill which includes implementing the Corrective Action Plan. Obviously, the remediation costs greatly outweigh the ability to generate revenues at Rivanna. This agreement clearly indicates that our associated local governments and UVA are committed to financially supporting this long-term effort to protect and correct adverse impacts on the environment.

MAJOR INITIATIVES

A Master Plan was completed for the Ivy Material Utilization Center (IMUC) site at the end of FY 2019. One of the items being advanced from this plan is the construction of a new public recycling center at the IMUC. The facility is projected to be opened by the end of FY 2020 and will offer similar recycling opportunities to the community as are offered at the McIntire Recycling Center. The budget for this project is \$350,000 and is being funded by the County of Albemarle.

MAJOR INITIATIVES: (CONTINUED)

As noted in last year's report, development of a composting operation is still under discussion between the City of Charlottesville, County of Albemarle, and RSWA. A planning document providing financial pro-forma for several composting options has been developed by a consultant and is also being included in the discussions. A planning study of the Paper Sort Recycling facility is being developed. This study will examine the current facility, look for ways to optimize its use, and then make some forward-looking projections to see if the facility can accommodate potential future growth. If it is thought to be undersized, the study will also identify a preliminary design for a future facility as well as some possible locations for its placement. The County of Albemarle is also considering establishing some additional recycling/convenience centers elsewhere in the County. These new facilities will need to be designed and constructed, most likely by the Authority, and incorporated into our operations.

Staff implemented the first year of the strategic plan adopted more than a year ago. Major initiatives accomplished were implementation of a compensation plan, consolidation and updating of the Personnel Management Plan, increasing and cataloguing green initiatives, completing an employee portal on our website, and enhancing the usability of the Authority website.

Hours of operation were increased, and tipping fees were reduced at the IMUC to better serve the public, which were strategies identified for action within the strategic plan. This is a continuous program of assessing our plan and mission into the future with progress towards achieving our identified goals.

See the MD&A for more information.

ACCOUNTING AND BUDGETARY CONTROLS AND FINANCIAL POLICIES

The Authority's accounting records are maintained on the accrual basis of accounting. (See Note 1C of the notes to the financial statements). Internal controls are maintained by segregation of duties and physical and data security systems in all areas of record keeping, billing, cash receipts, disbursements and purchasing authority. These controls are reviewed regularly by staff and are evaluated as part of the annual financial audit (see the Compliance Section of this report).

The Authority is required by the Service Agreement to adopt an annual fiscal year budget for setting tipping fees as well as for fiscal guidance to staff. Budgets include direct costs and provision for equipment replacement as well as allocations of administrative, maintenance, site improvements funding, recycling, and other expenses. The Authority is in a position to offer only those services that can be supported either through fees charged or through local government contributions. Those contributions are governed by various annual agreements with the City and County. Projections of tonnages and expenses by waste category are used to calculate tipping fee requirements for each waste category (see Table 5). A proposed budget incorporating proposed tipping fees and local government contributions is prepared by the Director of Finance and the Executive Director and submitted to the Board of Directors. A public hearing is held on any proposed tipping fee changes with at least fourteen days advance public notice. All budget items lapse at the end of the fiscal year, except encumbrances and contractual commitments.

ACCOUNTING AND BUDGETARY CONTROLS AND FINANCIAL POLICIES (CONTINUED)

Budgetary compliance is monitored and reported to the Board by the Director of Finance and Administration and the Executive Director. Projections of both revenues and expenses are understood to reflect anticipated service levels and to incorporate a variety of economic and demographic forecasts. Variances from budget line items are examined at least monthly to assure a direct relation between costs and actual service levels, emergencies or other contingent conditions.

AWARDS

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the Rivanna Solid Waste Authority for its Comprehensive Annual Financial Report for the year ended June 30, 2018. This was the twenty fourth consecutive year that this governmental unit has achieved this prestigious award. In order to be awarded a Certificate of Achievement, a governmental unit must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current comprehensive annual financial report continues to meet the Certificate of Achievement Program's requirements, and we are submitting it to the GFOA to determine its eligibility for another certificate.

ANNUAL AUDIT

State law and the Service Agreement require an annual audit of the books and records of the Authority. The opinion of our independent certified public accountants is included in the Financial Section. The concurrent reports on compliance are included in the Compliance Section.

ACKNOWLEDGEMENTS

The help of staff and of our certified public accountants is gratefully acknowledged. Such help and the Board of Directors' support and commitment to financial reporting excellence are essential to the preparation of this report.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Lonzy E. Wood, III". The signature is fluid and cursive, with a large initial "L" and "W".

Lonzy E. Wood, III, CPA
Director of Finance and Administration



Government Finance Officers Association

**Certificate of
Achievement
for Excellence
in Financial
Reporting**

Presented to

**Rivanna Solid Waste Authority
Virginia**

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

June 30, 2018

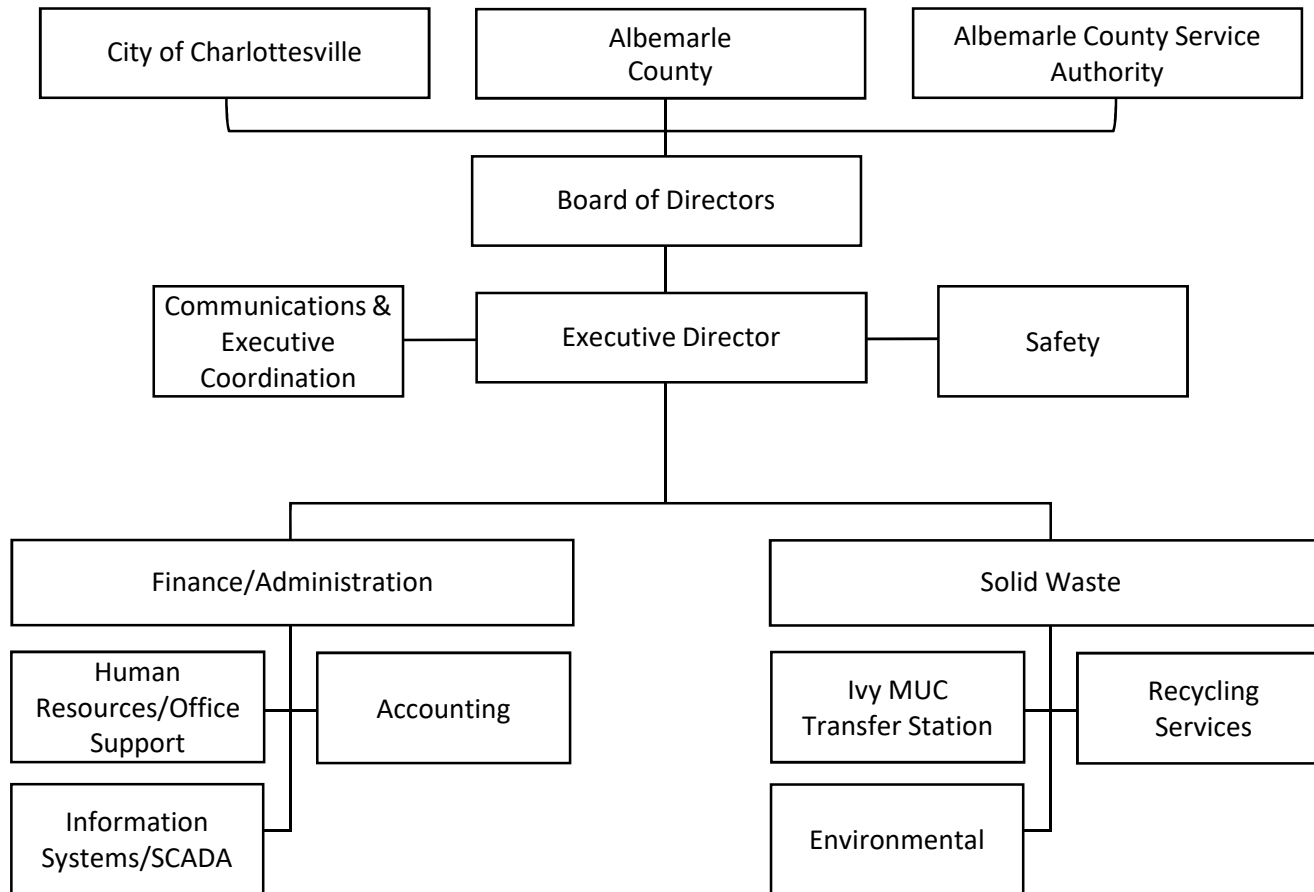
Christopher P. Morill

Executive Director/CEO

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Rivanna Solid Waste Authority

Organizational Chart



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Independent Auditors' Report

**To the Board of Directors
Rivanna Solid Waste Authority
Charlottesville, Virginia**

Report on the Financial Statements

We have audited the accompanying financial statements of the business-type activities of Rivanna Solid Waste Authority, as of and for the years ended June 30, 2019 and 2018, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the *Specifications for Audits of Authorities, Boards, and Commissions*, issued by the Auditor of Public Accounts of the Commonwealth of Virginia. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the business-type activities of Rivanna Solid Waste Authority, as of June 30, 2019 and 2018, and the changes in financial position, and cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and schedules related to pension and OPEB funding on pages 13-21 and 72-78 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise Rivanna Solid Waste Authority's basic financial statements. The introductory and statistical sections are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The introductory and statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated October 25, 2019, on our consideration of Rivanna Solid Waste Authority's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of Rivanna Solid Waste Authority's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering Rivanna Solid Waste Authority's internal control over financial reporting and compliance.

Robinson, Farney Cox Associates

Charlottesville, Virginia

October 25, 2019

Management's Discussion and Analysis

**To the Board of Directors
Rivanna Solid Waste Authority
Charlottesville, Virginia**

As management of Rivanna Solid Waste Authority (the Authority), we offer readers of our financial statements this narrative overview and analysis of the financial activities of the Authority for the fiscal year ended June 30, 2019. We encourage readers to consider the information presented here in conjunction with additional information that we have furnished in our letter of transmittal, which can be found on pages 3 through 7 of this report.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the Authority's basic financial statements. Since the Authority is engaged only in business-type activities, its basic financial statements are comprised of only two components: 1) enterprise fund financial statements and 2) notes to the financial statements. This report also contains required supplementary information in addition to the basic financial statements.

Enterprise fund financial statements. The enterprise fund financial statements are designed to provide readers with a broad overview of the Authority's finances, in a manner similar to a private-sector business.

The statement of net position presents information on the Authority's assets, deferred outflow of resources, liabilities, and deferred inflow of resources, with the difference reported as net position. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the Authority is improving or deteriorating.

The statement of revenues, expenses, and changes in net position presents information showing how the Authority's net position changed during the most recent fiscal year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of the cash flows. Thus, revenues and expenses are reported in this statement for some items that will only result in cash flows in future fiscal periods (e.g. earned but unused vacation leave).

The basic enterprise fund financial statements can be found on pages 24 through 27 of this report.

Notes to the financial statements. The notes provide additional information that is essential to a full understanding of the data provided in the financial statements. The notes to the financial statements can be found on pages 29 through 69 of this report.

Required supplementary information. This report also includes required supplementary information concerning the Authority's progress in funding its obligation to provide pension and other postemployment benefits to its employees. It is located immediately following the notes to financial statements.

Required supplementary information.

In FY 2018, the Authority adopted new accounting guidance, GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, and restated beginning balances pursuant to the requirements of GASB Statement No. 75. See Notes 11 and 16 for more information.

Financial Highlights

- The Authority's total net position increased by approximately \$769,00 this year and by \$1.63 million in the prior year, which indicates an improvement in its overall financial position.
- Total operating revenues increased 31% or \$405,000 this year, due to increased tonnages of domestic waste received after a drop in the tipping fee per ton.
- Transfer Station operating expenses increased by \$510,000 due to the cost of processing more waste.
- The Authority received \$1.075 million in capital grant funds this year from the County of Albemarle to fund the construction of the new transfer station facility in Ivy and \$1.77 million in the prior year.

Financial Analysis

The Authority's assets and deferred outflows of resources exceeded its liabilities and deferred inflows of resources (net position) at the close of the most recent fiscal year by \$7.28 million. Total net position increased by \$769,000 this year and by \$1.6 million in FY 2018. Net position invested in capital assets increased by \$869,000 this year and by \$2.35 million in the prior year due to capital expenditures in building the new transfer station. The Authority uses these capital assets to provide services to its customers, so these assets are not available for future spending. Unrestricted net position has been negative for the past few years, because estimated landfill closure and post-closure costs for many years to come have been recorded as liabilities. However, these costs are funded on a pay-as-you-go basis through financial assurance provided by local government contributions.

	Net Position		
	2019	2018	2017
Current and other assets	\$ 3,656,408	\$ 3,991,850	\$ 4,716,992
Capital assets	10,089,921	9,285,711	6,840,559
Total assets	<u>\$ 13,746,329</u>	<u>\$ 13,277,561</u>	<u>\$ 11,557,551</u>
Deferred outflows of resources	<u>\$ 78,445</u>	<u>\$ 36,862</u>	<u>\$ 90,844</u>
Noncurrent liabilities	\$ 5,517,271	\$ 5,633,047	\$ 5,834,808
Current liabilities	1,000,152	1,119,761	919,337
Total liabilities	<u>\$ 6,517,423</u>	<u>\$ 6,752,808</u>	<u>\$ 6,754,145</u>
Deferred inflows of resources	<u>\$ 22,635</u>	<u>\$ 46,005</u>	<u>\$ 9,278</u>
Net position:			
Investment in capital assets	\$ 10,062,470	\$ 9,192,978	\$ 6,840,559
Unrestricted	(2,777,754)	(2,677,368)	(1,955,587)
Total net position	<u>\$ 7,284,716</u>	<u>\$ 6,515,610</u>	<u>\$ 4,884,972</u>

Total operating revenues grew significantly for FY 2019 compared to the previous fiscal year with a 31% increase. Operating revenues were relatively flat from FY 2017 to FY 2018. Tipping fee revenues were the reason for this growth in revenues. Several changes that are discussed in the Operations review caused these increases. Clean fill and vegetative materials saw a \$65,000 increase in tipping fees for FY 2019 after decreasing \$54,500 between FY 2018 and FY 2017. Fluctuations of these materials are affected by construction activity in the region. Recycling revenues had another decrease in revenues for FY 2019 with a 22% decrease or \$43,000. This followed a decrease of \$31,700 or 14% between FY 2018 and FY 2017. Recycling tonnages received were very strong with an 18% increase; however, market prices have declined significantly.

Financial Analysis: (Continued)

Contributions received from the City of Charlottesville, the County of Albemarle, and the University of Virginia to fund remediation costs remained consistent with last year with only a \$13,000 decrease for FY 2019. That funding decreased 31% or \$180,000 for FY 2018 compared to the previous year. The contributions were based on changes in estimated remediation costs budgeted for each fiscal year reduced by the planned use of \$668,000 of reserves over the two years. The County and City also contributed \$1,078,500 this year as budgeted to help fund operating expenses, which was \$331,500 more than the amount contributed in the prior year.

Total environmental expenses increased by \$190,800 this year after increasing \$160,500 in the prior year. Since the initial estimate of liability and related expense was recorded several years ago, the completion of certain landfill closure activities and changing estimates of future remediation costs associated with the permitted post-closure care can result in fluctuations in the liabilities and expenses. See the Review of Operations section for more information.

Changes in Net Position			
	2019	2018	2017
Revenues:			
Operating revenues:			
Tipping fees	\$ 1,321,174	\$ 878,841	\$ 876,382
Recycling revenues	152,871	195,912	227,614
Other revenues	238,541	233,133	214,771
Nonoperating revenues:			
Local government contributions - remediation support	383,742	396,787	576,714
Local government contributions - operations support	1,078,539	747,161	368,856
Grants	29,597	27,118	27,811
Interest earned	69,162	50,437	31,333
Other income	7,308	8,034	5,220
Gain on disposal of assets	-	5,846	-
Capital grants	1,075,125	1,771,792	210,083
Total revenues	\$ 4,356,059	\$ 4,315,061	\$ 2,538,784
Expenses:			
Operating expenses:			
Administration	\$ 687,571	\$ 496,812	\$ 388,524
Transfer station	1,419,777	909,581	808,104
Ivy Material Utilization Center	359,715	298,782	259,669
Ivy environmental	524,934	425,466	264,995
Recycling programs	431,398	455,216	312,052
Depreciation	120,830	58,566	51,789
Nonoperating expenses:			
Loss on disposal of assets	42,728	-	-
Total expenses	\$ 3,586,953	\$ 2,644,423	\$ 2,085,133
Change in net position	\$ 769,106	\$ 1,670,638	\$ 453,651
Net position, beginning of year, as restated	6,515,610	4,844,972	4,431,321
Net position, end of year	\$ 7,284,716	\$ 6,515,610	\$ 4,884,972

Capital Asset and Debt Administration

Capital Assets - The Authority's investment in capital assets net of accumulated depreciation increased \$804,000 for FY 2019 due to capital project construction costs. \$553,000 was spent to complete the construction of the new transfer station in Ivy, and \$279,000 was spent on a new gas flare system; both of which were capitalized (\$3.4 million) as completed and moved from construction in progress to building and fixtures for noncurrent assets. Only \$443,000 in equipment was capitalized for FY 2019. Depreciation of \$120,800 and \$58,600 was recorded in fiscal year 2019 and 2018 respectively. There was a \$51,400 loss for FY 2019 on the abandonment of the conveyor equipment with the decommissioning of the old transfer station. Below is a comparison of the items that make up net capital assets at the end of the past three fiscal years.

	<u>2019</u>	<u>2018</u>	<u>2017</u>
Land, land improvements and landfill site	\$ 5,943,439	\$ 5,943,439	\$ 5,943,439
Construction in progress	91,121	2,743,868	298,215
Buildings and fixtures	3,247,679	95,674	110,675
Vehicles and equipment	<u>807,682</u>	<u>502,730</u>	<u>488,230</u>
Total capital assets, net	\$ <u>10,089,921</u>	\$ <u>9,285,711</u>	\$ <u>6,840,559</u>

Additional information about the Authority's capital assets may be found in Notes 3 and 4 of the notes to the financial statements.

Long-Term Debt - The Authority has a \$5.8 million obligation to close the transfer station and landfill site and to perform post-closure monitoring. This liability decreased slightly this year by \$126,000 or 2%. More detailed information on the Authority's long-term liabilities is presented in Notes 7 and 9 of the notes to the financial statements.

To meet the new reporting standards set forth by the Governmental Accounting Standards Board (GASB), the Authority recognized for the first time in FY 2015 the net pension obligation of \$242,000 as a long-term liability. This requirement is a result of GASB Statement No. 68 Accounting and Reporting for Pensions. For FY 2019, that liability is \$154,800 which is an increase of \$58,000 compared to FY 2018's liability of \$96,800. This liability was \$224,500 for FY 2017 which shows that this estimate can fluctuate each year in any direction. This liability represents the Authority's share of the Virginia Retirement System (VRS)'s actuarially determined total pension liability less plan assets or net position to pay for that liability. The actuary also determines the contribution rates needed in the future that the Authority pays directly to VRS to gradually fund this obligation. The contribution rate for FY 2019 was 9.32% of covered employee compensation and the rate was 7.92% in the prior two years. The contributions were paid into VRS along with the 5% employee contributions to meet this future obligation. More detailed information regarding the Authority's pension plan and the net pension liability is presented in Note 6 of the notes to the financial statements.

Review of Operations

General: There were several significant changes this year that affected the financial results noted in the analysis section of this report. The new Ivy transfer station was completed and opened on September 25, 2018. The new transfer station replaced the open-air transfer station that was required to be decommissioned by the Va. Department of Environmental Quality (DEQ).

Review of Operations: (Continued)

Demolition of Old Transfer Station



This project was prompted several years ago because the existing transfer station, which was built in the late 1990s, did not meet modern permitting requirements as determined by DEQ. The new transfer station has a capacity to process 300 tons of solid waste per day and is designed to more efficiently handle traffic flow to help eliminate customer waiting times for offloading their waste. The existing transfer station was demolished, and the remaining undepreciated values were written-off for a small loss of \$51,400.

Municipal Solid Waste Transfer Station: The MSW transfer station in Ivy accepts MSW and small loads of construction debris from residential and commercial haulers. The waste is loaded into top loading trailers, and a contractor hauls and disposes of the waste at a contracted facility in Amelia County. Tonnages nearly doubled this year, and the related tipping fees generated by this operation were \$954,000 this year, which was a 64% increase from the prior year. See the chart below comparing the total tons received for the last 4 years.

Municipal Solid Waste Annual Tonnages	
FY 2016	7,761.04
FY 2017	8,340.56
FY 2018	8,423.12
FY 2019	16,404.44

The tipping fee for MSW & construction waste was another major change in FY 2019. The Board approved the reduction of the domestic waste tipping fee from \$66 per ton to \$52 per ton effective January 1, 2019. This was at the request and consent of the County of Albemarle Board of Supervisors. The purpose of this was to generate more waste tonnages to take advantage of economies of scale. The differential (or margin) of variable costs per ton disposal at \$39 per ton and the charge per ton of \$52 at higher tonnages volume would help reduce the overall costs when factoring in relative fixed costs to operate the facility.

Review of Operations: (Continued)

New Transfer Station in Operation

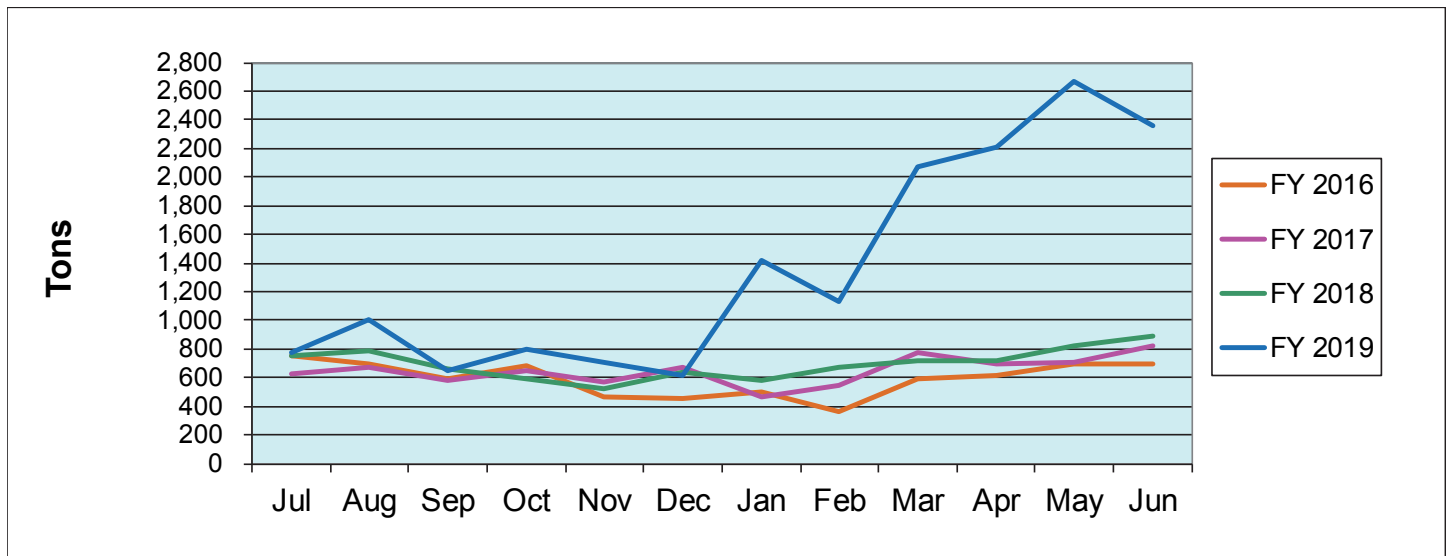


Hours of operation at the Ivy transfer station were reduced in FY 2014 by closing on all Mondays to help reduce costs during a time of economic downturn and reducing the need for local funding from the County. For FY 2019, the Board recognized that there was a need to better serve the public and being closed on Monday's was not consistent with that goal. At the February 2019 Board meeting, with the consent of Albemarle County, the Board approved opening on Mondays as a pilot to test if this does indeed better serve the public. After preparing for the additional hours by using contracted staffing resources, the Authority began opening Mondays on March 18. This pilot period was designated to run through September of the next fiscal year when the Board will consider ending the pilot period or making a decision to permanently operating on Mondays.

Both of the decisions had a positive effect on the volume of tonnage received. The opening of the new transfer station did not generate significant additional tonnages. As you can see from the chart below, the monthly tonnages received dramatically increased in January and March primarily due to these two decisions and explains the significant increase in tipping fees revenues previously mentioned.

Review of Operations: (Continued)

Ivy MSW Transfer Station Tonnages FY 2016-2019



Ivy Material Utilization Center (IMUC): Waste items are received at the IMUC, where most of the items are processed for sale or reuse, such as metals, tires, grindable vegetative material, and pallets. Clean fill, which is inert material, is accepted as well. Tipping fees from these items generated \$288,000 in gross revenues for the Authority this year. This is a 53% increase over last year driven by much higher volumes of clean fill and vegetative materials being received. There were no changes to the operation for the current year. The resale of items such as scrap metal and mulch resulted in revenues of \$105,000, and hauling fees decreased \$12,000 to \$39,800 this year. The IMUC continues to have the semiannual household hazardous waste (HHW) events for collection of paint, batteries, and other HHW, which is a very popular program. The public drop-off recycling center and a "blue bag" drop-off center for Albemarle County haulers that collect waste paper remained at the center this year.

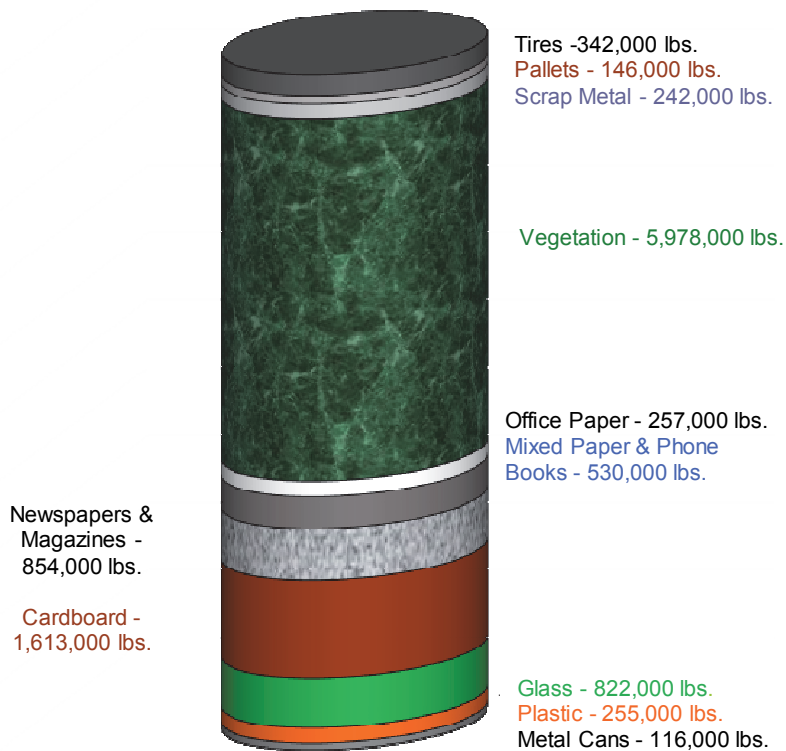
The Authority continued to offer the organic compost collection and receiving program at IMUC. This program is mostly a working partnership with UVa Facilities Management to receive compostable food waste materials from UVa sources and contract with a private vendor to compost the materials for end users off site. The Authority was also able to provide bins to the general public at no charge to collect compostable materials. This program generated \$78,600 in revenues and processed approximately 443 tons of food waste.

Review of Operations: (Continued)

Recycling: The Authority assumed operational responsibility as of February 1992 for the McIntire Road Recycling Center (a drop-off facility located in the City). This center collects many of the traditional items (paper, glass, plastic, and cans) for recycling and other non-traditional items, like used books, phone books, and Christmas trees.

RSWA FY 2019 Recycling & Reuse

**McIntire Recycling Center, Paper Sort Facility,
and Ivy Material Utilization Center**



11,155,000 Pounds of Waste Diverted for Reuse or Recycling

The Paper Sort Facility functions as a transfer station where the Authority receives newspaper, magazines, cardboard, and file stock (fiber products), and plastic from the McIntire recycling center, other smaller collection sites in the County, and private haulers. The baler is used to ready the cardboard, boxboard, and plastic for transportation. Contracts are in place to sell and transport these products to mills and processors, and many of our contractors consider our recycled material to be high quality with little contamination. Recycling tonnages received for FY 2019 increased 18%. However, these tonnages generated less in revenues compared to FY 2018. Recycling operations generated \$152,900 in revenues for FY 2019, which was a decrease of \$43,000 from the previous year due to lower market prices. Cardboard, one of our largest revenue producers, had a market price drop of 43% from June 2018 to June 2019. Newspaper, another high-end revenue producer, had a 28% market price decline. This graphic shows the amounts of all materials that were diverted from the waste stream by both the recycling operations and the operations at Ivy in FY 2019. For more information, see Table 4 in the Statistical Section.

Administration: By mutual agreement of the respective Boards of Directors, the Authority shares administrative staff and office space with the Rivanna Water and Sewer Authority and pays an allocated share of joint expenses. Administrative procedures were implemented to ensure proper segregation of funds, purchasing activity, personnel and similar matters. The Solid Waste Authority paid the Water Authority \$460,000 for this joint administrative service this year and \$409,000 in the previous year, as budgeted to fund projected administrative expenses.

Review of Operations: (Continued)

Environmental Remediation: The Authority has long-term obligations for the remediation of the Ivy Landfill. In the late 1990s, it was confirmed that groundwater contamination had occurred at Ivy, contained within the boundary of the landfill property but beyond the footprint of the landfill cells. A remediation program was developed that began with a “pump and treat” system on the west side and replaced in 2006 by a broader site-wide enhanced bioremediation program. Enhanced Bioremediation included the injection of carefully selected substrate material into the groundwater to enhance the natural chemical reduction of the contamination to clean groundwater. In July 2013, the injection of substrate was suspended to allow the long-term effects of the groundwater remediation efforts to be evaluated. Groundwater monitoring continues to show that groundwater contamination remains on-site, stable, and that off-site receptors are protected from impacts.

This is part of the Authority’s continued proactive strategy to meet the ongoing obligations and regulatory requirements at the Ivy Landfill. Through an extensive program of groundwater monitoring and remediation activities, historical contamination has been constrained onsite and continues to be closely monitored to observe the efficacy of the program and protection of human and ecological health.

Air quality continues to be managed by operation of a site-wide, active gas collection system and continued system evaluation. In August 2018, a new landfill gas flare was installed to replace the existing flare. The new flare is a smaller model flare that is appropriately sized to manage the much-reduced quantity of landfill gas that is being produced from the closed waste disposal cells.

A protocol has been developed to evaluate the future need to recap sections of the landfill that have witnessed significant settlement caused by the decay of buried wastes. This recapping will be necessary to maintain the effectiveness of the landfill caps and limit the infiltration of precipitation into the waste. These recapping efforts will appear in future budget estimates and are expected to occur at a frequency of every 5 to 10 years.

Due to recent changes in Virginia’s dam safety requirements, the dam at the landfill, historically used as a source for irrigation water, is now required to be inspected and registered with the Virginia Department of Conservation and Recreation. A consultant has been procured that will aid the Authority in evaluating whether it is in our best interest to have the dam removed, modified, or fully brought into permitted compliance.

Requests for Information

This financial report is designed to provide a general overview of the Authority’s finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to the Finance Department at 695 Moores Creek Lane, Charlottesville, Virginia 22902-9016.

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Basic Financial Statements

Statement of Net Position
At June 30, 2019 and 2018

	At June 30,	
	2019	2018
ASSETS		
Current assets:		
Cash and cash equivalents (Notes 1 & 2)	\$ 3,305,337	\$ 3,626,017
Accounts receivable	<u>227,514</u>	<u>189,294</u>
Total current assets	<u>\$ 3,532,851</u>	<u>\$ 3,815,311</u>
Noncurrent assets:		
Restricted assets:		
Cash and cash equivalents (Notes 1 & 2)	\$ <u>123,557</u>	\$ <u>176,539</u>
Total restricted assets	<u>\$ 123,557</u>	<u>\$ 176,539</u>
Capital assets (Note 3):		
Land and improvements	\$ 5,943,439	\$ 5,943,439
Buildings and fixtures	3,844,316	633,119
Landfill site	5,665,500	5,665,500
Ivy landfill equipment	1,183,825	1,436,865
Vehicles	794,043	731,319
Office equipment	16,736	16,736
Recycling facilities equipment	389,984	353,962
Accumulated depreciation (Note 3)	<u>(7,839,043)</u>	<u>(8,239,097)</u>
Subtotal	<u>\$ 9,998,800</u>	<u>\$ 6,541,843</u>
Construction in progress (Note 4)	<u>91,121</u>	<u>2,743,868</u>
Total net capital assets	<u>\$ 10,089,921</u>	<u>\$ 9,285,711</u>
Total noncurrent assets	<u>\$ 10,213,478</u>	<u>\$ 9,462,250</u>
Total assets	<u>\$ 13,746,329</u>	<u>\$ 13,277,561</u>
DEFERRED OUTFLOWS OF RESOURCES		
Deferred outflows - pension (Note 6)	\$ 73,017	\$ 34,529
Deferred outflows - OPEB - group life insurance (Note 11)	<u>5,428</u>	<u>2,333</u>
Total deferred outflows of resources	<u>\$ 78,445</u>	<u>\$ 36,862</u>

The accompanying notes to financial statements are an integral part of this statement.

Statement of Net Position (continued)
At June 30, 2019 and 2018

	At June 30,	
	2019	2018
LIABILITIES		
Current liabilities:		
Accounts payable and accrued expenses	\$ 421,439	\$ 482,895
Retainage payable	27,451	92,733
Accrued landfill corrective action and post-closure costs	483,443	476,650
Compensated absences - current portion (Note 9)	30,336	30,000
Other long-term obligation (Note 13)	37,483	37,483
Total current liabilities	\$ 1,000,152	\$ 1,119,761
Noncurrent liabilities:		
Payable from restricted assets:		
Accrued transfer station closure costs (Note 7)	\$ 123,557	\$ 176,539
Accrued corrective action costs (Note 7)	2,886,799	2,858,581
Accrued post-closure monitoring costs (Note 7)	2,277,622	2,385,444
Compensated absences (net of current portion) (Note 9)	-	3,691
Other long-term obligation (Note 13)	38,488	75,971
Net pension liability (Note 6)	154,805	96,821
Net OPEB liability (Note 11)	36,000	36,000
Total noncurrent liabilities	\$ 5,517,271	\$ 5,633,047
Total liabilities	\$ 6,517,423	\$ 6,752,808
DEFERRED INFLOWS OF RESOURCES		
Deferred inflows - pension (Note 6)	\$ 19,635	\$ 42,005
Deferred inflows - OPEB - group life insurance (Note 11)	3,000	4,000
Total deferred inflows of resources	\$ 22,635	\$ 46,005
NET POSITION		
Net position:		
Investment in capital assets	\$ 10,062,470	\$ 9,192,978
Unrestricted	(2,777,754)	(2,677,368)
Total net position	\$ 7,284,716	\$ 6,515,610

The accompanying notes to financial statements are an integral part of this statement.

Statement of Revenues, Expenses and Changes in Net Position
 Years Ended June 30, 2019 and 2018

	Year Ended June 30,	
	2019	2018
Operating revenues:		
Tipping fees	\$ 1,321,174	\$ 878,841
Recycling revenues	152,871	195,912
Other revenues	238,541	233,133
Total operating revenues	\$ 1,712,586	\$ 1,307,886
Operating expenses:		
Administration	\$ 687,571	\$ 496,812
Transfer station	1,419,777	909,581
Ivy Material Utilization Center	359,715	298,782
Ivy environmental	524,934	425,466
Recycling programs	431,398	455,216
Depreciation	120,830	58,566
Total operating expenses	\$ 3,544,225	\$ 2,644,423
Operating income (loss)	\$ (1,831,639)	\$ (1,336,537)
Nonoperating revenues (expenses):		
Interest earned	\$ 69,162	\$ 50,437
Local government contributions - remediation support	383,742	396,787
Local government contributions - operations support	1,078,539	747,161
Other income	7,308	8,034
Grants	29,597	27,118
Gain (loss) on disposal of assets	(42,728)	5,846
Total nonoperating revenues (expenses)	\$ 1,525,620	\$ 1,235,383
Income before capital grants	\$ (306,019)	\$ (101,154)
Capital grants	1,075,125	1,771,792
Change in net position	\$ 769,106	\$ 1,670,638
Net position, beginning of year, as restated	6,515,610	4,844,972
Net position, end of year	\$ 7,284,716	\$ 6,515,610

The accompanying notes to financial statements are an integral part of this statement.

Statement of Cash Flows
Years Ended June 30, 2019 and 2018

	<u>Year Ended June 30,</u>	
	<u>2019</u>	<u>2018</u>
Cash flows from operating activities:		
Receipts from customers and users	\$ 1,681,674	\$ 1,235,870
Payments to suppliers	(2,227,504)	(2,107,805)
Payments to and on behalf of employees	<u>(1,145,006)</u>	<u>(802,354)</u>
Net cash provided by (used for) operating activities	\$ <u>(1,690,836)</u>	\$ <u>(1,674,289)</u>
Cash flows from noncapital financing activities:		
Contributions from local governments	\$ 1,462,281	\$ 1,143,948
Grant income	<u>29,597</u>	<u>27,118</u>
Net cash provided by (used for) noncapital financing activities	\$ <u>1,491,878</u>	\$ <u>1,171,066</u>
Cash flows from capital and related financing activities:		
Additions to capital assets	\$ (1,330,685)	\$ (2,125,544)
Proceeds from the disposal of capital assets	11,694	6,346
Capital grants	<u>1,075,125</u>	<u>1,771,792</u>
Net cash provided by (used for) capital and related financing activities	\$ <u>(243,866)</u>	\$ <u>(347,406)</u>
Cash flows from investing activities:		
Interest received	\$ <u>69,162</u>	\$ <u>50,437</u>
Net cash provided by (used for) investing activities	\$ <u>69,162</u>	\$ <u>50,437</u>
Increase (decrease) in cash and cash equivalents	\$ (373,662)	\$ (800,192)
Cash and cash equivalents at beginning of year (including \$176,539 and \$173,417, respectively reported in restricted accounts)	<u>3,802,556</u>	<u>4,602,748</u>
Cash and cash equivalents at end of year (including \$123,557 and \$176,539 respectively reported in restricted accounts)	\$ <u><u>3,428,894</u></u>	\$ <u><u>3,802,556</u></u>
Reconciliation of operating income (loss) to net cash provided by (used for) operating activities:		
Operating income (loss)	\$ (1,831,639)	\$ (1,336,537)
Adjustments to reconcile operating income (loss) to net cash provided by (used for) operating activities:		
Depreciation	120,830	58,566
Other nonoperating income	7,308	8,034
Changes in operating assets and liabilities:		
(Increase) decrease in accounts receivable and prepaid items	(38,220)	(75,050)
Increase (decrease) in accounts payable and accrued expenses	224,485	(179,575)
Increase (decrease) in net OPEB liability	-	(5,000)
Increase (decrease) in other long-term obligations	(37,483)	(43,233)
Increase (decrease) in compensated absences	(3,355)	4,029
Increase (decrease) in net pension liability	57,984	(127,695)
(Increase) decrease in deferred outflows of resources - pension	(38,488)	56,315
Increase (decrease) in deferred inflows of resources - pension	(22,370)	32,727
(Increase) decrease in deferred outflows of resources - OPEB - GLI	(3,095)	(1,333)
Increase (decrease) in deferred inflows of resources - OPEB - GLI	(1,000)	4,000
Increase (decrease) in accrued landfill and transfer station obligations	<u>(125,793)</u>	<u>(69,537)</u>
Net cash provided by (used for) operating activities	\$ <u><u>(1,690,836)</u></u>	\$ <u><u>(1,674,289)</u></u>
Noncash investing, capital and financing activities:		
(Increase) decrease in retainage payable for capital assets	\$ <u><u>65,282</u></u>	\$ <u><u>(92,733)</u></u>

The accompanying notes to financial statements are an integral part of this statement.

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RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018

NOTE 1—SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:

The Rivanna Solid Waste Authority is a jointly governed organization formed by the City of Charlottesville and the County of Albemarle pursuant to the Virginia Water and Waste Authorities Act (Code of Virginia, 1950 as amended). The Authority was formed to develop regional garbage and refuse disposal, as such terms are defined in Section 15.2-5101 of the Act, including development of systems and facilities for recycling, waste reduction and disposal alternatives with the ultimate goal of acquiring, financing, constructing, and/or operating and maintaining regional solid waste disposal areas, systems and facilities, all pursuant to the provisions of the Act. The Authority began operations on February 1, 1991.

A. Financial Reporting Entity

The Rivanna Solid Waste Authority provides the services mentioned above to the citizens of its participating governments, City of Charlottesville and County of Albemarle. However, these participating governments do not have a financial interest in or responsibility to the Authority.

The Authority's governing body is comprised of three members appointed by the City, three members appointed by the County, and one member who is jointly appointed by the City and County. Therefore, none of the participants appoints a voting majority of board members.

The Authority is perpetual. No participating government has access to its resources or surpluses, nor is any participant liable for the Authority's debts or deficits. The Authority also has the ability to finance its capital projects through user charges or the sale of revenue bonds.

Based on the above representations, the Rivanna Solid Waste Authority has been determined to be a jointly governed organization of the City of Charlottesville and County of Albemarle. The Authority is not a component unit of either of the participating governments.

For purposes of reporting entity disclosure, it should be noted that a separate entity, the Rivanna Water & Sewer Authority, provides wholesale water and sewer services to the City of Charlottesville and the Albemarle County Service Authority. Although certain administrative employees provide services to both Authorities, each Authority is operationally and legally independent.

B. Basic Financial Statements

As a requirement of GASB Statement 34, the financial statements include a Management's Discussion and Analysis (MD&A) section providing an analysis of the Authority's overall financial position and results of operations.

Since the Authority is only engaged in business-type activities, it is required to present only the financial statements required for enterprise funds. For the Authority, the basic financial statements and required supplementary information consist of:

- Management's discussion and analysis

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 1—SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES: (CONTINUED)

B. Basic Financial Statements (Continued)

- Enterprise fund financial statements
 - Statement of Net Position
 - Statement of Revenues, Expenses, and Changes in Net Position
 - Statement of Cash Flows
 - Notes to Financial Statements
- Required Supplementary Information
 - Schedule of Changes in Net Pension Liability and Related Ratios
 - Schedule of Employer Contributions-Pension Plan
 - Notes to Required Supplementary Information-Pension Plan
 - Schedule of Authority's Share of Net OPEB Liability-Group Life Insurance Program
 - Schedule of Employer Contributions-Group Life Insurance Program
 - Notes to Required Supplementary Information-Group Life Insurance Program

C. Basis of Accounting

The Rivanna Solid Waste Authority operates as an enterprise fund and its accounts are maintained on the accrual basis of accounting. Under this method, revenues are recognized when earned, and expenses are recorded as liabilities when incurred, without regard to receipt or payment of cash. The Authority accrues revenue for services rendered but not yet billed at the end of the fiscal year.

The Authority distinguishes operating revenues and expenses from nonoperating items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with the Authority's principal ongoing operations. The principal operating revenues of the Authority are charges to customers for sales and services. Operating expenses include the cost of sales and services, administrative expenses, and depreciation on capital assets. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses.

D. Cash and Cash Equivalents

The Authority's cash and cash equivalents consist of cash on hand, demand deposits, certificates of deposit and short-term investments with original maturities of three months or less from the date of acquisition.

E. Restricted Assets

Certain cash accounts held by the Authority are set aside for landfill and transfer station closure and landfill post-closure monitoring costs. The accounts are properly classified as restricted assets on the balance sheet. Regulations require the Authority to maintain the restricted accounts for the landfill and transfer station closure and landfill post-closure monitoring costs.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 1—SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES: (CONTINUED)

F. Capital Assets

Capital assets, which include property, plant, equipment, and infrastructure assets (e.g., roads, bridges, sidewalks, and similar items), are reported in the financial statements. Capital assets are defined by the Authority as assets with an initial individual cost of more than \$5,000 (amount not rounded) and an estimated useful life in excess of one year. Such assets are recorded at historical cost or estimated historical cost if purchased or constructed. Donated capital assets are recorded at acquisition value at the date of donation.

The City of Charlottesville and the County of Albemarle contributed certain landfill assets to the Authority. These assets are all reported at their acquisition value on the date donated. Landfill vehicles and equipment are valued based upon estimates by Authority personnel. Landfill cells and the landfill site were valued by the Authority's consulting engineer. The engineer also estimated the accrued landfill closure and related expenses. The remaining land area at the landfill site is reported at its value as a landfill site. If the Authority determines that the Ivy site will no longer be used for future waste disposal, the value will be adjusted to its fair value.

The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend its useful life are not capitalized.

Major outlays for capital assets and improvements are capitalized as projects are constructed. Interest incurred during the construction phase of capital assets of business-type activities is included as part of the capitalized value of the assets constructed. No interest was capitalized during the current or previous fiscal year.

Depreciation of landfill cell development and site costs is recorded based on remaining units of capacity.

Property, plant, equipment and infrastructure are depreciated using the straight-line method over the following estimated useful lives:

<u>Assets</u>	<u>Years</u>
Buildings & Fixtures	15 to 40
Vehicles	5 to 15
Office equipment	5
Landfill equipment	5 to 15

Total depreciation for the years ended June 30, 2019 and 2018 was \$120,830 and \$58,566, respectively.

G. Other Significant Accounting Policies

Accounts receivable are stated at book value utilizing the direct write-off method for immaterial uncollectible accounts.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 1—SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES: (CONTINUED)

H. Investments

Money market investments, participating interest-earning investment contracts (repurchase agreements) that have a remaining maturity at time of purchase of one year or less, nonparticipating interest-earning investment contracts (nonnegotiable certificates of deposit (CDs) and external investment pools) are measured at amortized cost. All other investments are reported at fair value.

I. Inventory

Consumption of materials and supplies is recorded as an expense when used. No inventory amounts are recorded as an asset, as available inventories are not significant.

J. Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates.

K. Net Position

Net position is the difference between assets and deferred outflows of resources and liabilities and deferred inflows of resources. Net investment in capital assets represents capital assets, reduced by accumulated depreciation and by any outstanding debt, and deferred outflows of resources and increased by deferred inflows of resources related to the acquisition, construction or improvement of those assets. Restricted net position represents restricted assets reduced by liabilities and deferred inflows of resources related to those assets.

L. Reclassification

Certain amounts in previously issued financial statements have been restated to conform to current year classifications.

M. Closure and Post-Closure Obligations

The Authority records all estimated closure costs for existing cells as a liability. Upon final closure of the landfill site, the Authority is then responsible, under current Federal regulations, for maintaining the closed site for the following thirty years.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 1—SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES: (CONTINUED)

N. Deferred Outflows and Inflows of Resources

In addition to assets, the statement of net position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, deferred outflows of resources, represents a consumption of net position that applies to a future period(s) and so will not be recognized as an outflow of resources (expense) until then. The Authority has two types of items that qualify for reporting in this category. One type is comprised of certain items related to the measurement of the net pension liability. It is comprised of contributions to the pension plan made during the current year and subsequent to the net pension liability measurement date, which will be recognized as a reduction of the net pension liability next fiscal year, differences between expected and actual experience, and net difference between projected and actual pension plan earnings. Another type of deferred outflow is related to the Group Life Insurance Program (GLI OPEB Plan). It consists of employer contributions to the OPEB plan in the current year and subsequent to the OPEB liability measurement date, which will be recognized as a reduction of the net GLI OPEB liability next fiscal year, differences between expected and actual experience, and changes in proportionate share between measurement dates.

In addition to liabilities, the statement of net position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. The Authority has two types of items that qualify for reporting in this category. Items related to the measurement of the net pension liability that are reported as deferred inflows of resources include differences between expected and actual experience, changes in assumptions, and the net difference between projected and actual earnings on pension plan investments. Deferred inflows of resources related to the measurement of the net GLI OPEB liability include differences between expected and actual experience, the net difference between projected and actual earnings on GLI OPEB plan investments, and changes in assumptions.

For more detailed information regarding deferred outflows and inflows of resources related to the pension plan, refer to Note 6. For more information on those related to the GLI OPEB Plan, refer to Note 11.

O. Net Position Flow Assumption

Sometimes the Authority will fund outlays for a particular purpose from both restricted (e.g., restricted bond or grant proceeds) and unrestricted resources. In order to calculate the amounts to report as restricted net position and unrestricted net position in the financial statements, a flow assumption must be made about the order in which the resources are considered to be applied. It is the Authority's policy to consider restricted net position to have been depleted before unrestricted net position is applied.

P. Pensions

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Authority's Retirement Plan and the additions to/deductions from the Authority's Retirement Plan's net fiduciary position have been determined on the same basis as they were reported by the Virginia Retirement System (VRS). For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 1—SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES: (CONTINUED)

Q. Other Postemployment Benefits (OPEB)

Group Life Insurance

The Virginia Retirement System (VRS) Group Life Insurance (GLI) Program is a multiple employer cost sharing plan. It provides coverage to state employees, teachers, and employees of participating political subdivisions. The GLI Program was established pursuant to §51.1-500 et seq. of the Code of Virginia, as amended, and which provides the authority under which benefit terms are established or may be amended. The GLI Program is a defined benefit plan that provides a basic group life insurance benefit for employees of participating employers. For purposes of measuring the net GLI Program OPEB liability, deferred outflows of resources and deferred inflows of resources related to the GLI OPEB, and GLI OPEB expense, information about the fiduciary net position of the VRS GLI Program OPEB and the additions to/deductions from the VRS GLI OPEB's net fiduciary position have been determined on the same basis as they were reported by VRS. In addition, benefit payments are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

NOTE 2—DEPOSITS AND INVESTMENTS:

Deposits

Deposits with banks are covered by the Federal Deposit Insurance Corporation (FDIC) and collateralized in accordance with the Virginia Security for Public Deposits Act (the "Act") Section 2.2-4400 et. seq. of the Code of Virginia. Under the Act, banks and savings institutions holding public deposits in excess of the amount insured by the FDIC must pledge collateral to the Commonwealth of Virginia Treasury Board. Financial Institutions may choose between two collateralization methodologies and depending upon that choice, will pledge collateral that ranges in the amounts from 50% to 130% of excess deposits. Accordingly, all deposits are considered fully collateralized.

Investments

Statutes authorize the Authority to invest in obligations of the United States or agencies thereof, obligations of the Commonwealth of Virginia or political subdivisions thereof, obligations of the International Bank for Reconstruction and Development (World Bank), the Asian Development Bank, the African Development Bank, "prime quality" commercial paper and certain corporate notes, banker's acceptances, repurchase agreements and the State Treasurer's Local Government Investment Pool (LGIP).

The Authority does not have a formal investment policy that addresses credit risk or interest rate risk.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 2-DEPOSITS AND INVESTMENTS: (CONTINUED)

Credit Risk of Debt Securities

The Authority's rated debt investments as of June 30, 2019 and 2018 were rated by Standard & Poor's and the ratings are presented below using the Standard & Poor's rating scale.

Authority's Rated Debt Investments' Values - 2019

<u>Rated Debt Investments</u>	<u>Fair Quality Ratings AAAm</u>
Local Government Investment Pool	\$ 2,091,251
Total	<u>\$ 2,091,251</u>

Authority's Rated Debt Investments' Values - 2018

<u>Rated Debt Investments</u>	<u>Fair Quality Ratings AAAm</u>
Local Government Investment Pool	\$ 2,597,353
Total	<u>\$ 2,597,353</u>

Interest Rate Risk

Investment Maturities (in years) - 2019

<u>Investment Type</u>	<u>Fair Value</u>	<u>Less Than 1 Year</u>
Local Government Investment Pool	\$ 2,091,251	\$ 2,091,251
Total	<u>\$ 2,091,251</u>	<u>\$ 2,091,251</u>

Investment Maturities (in years) - 2018

<u>Investment Type</u>	<u>Fair Value</u>	<u>Less Than 1 Year</u>
Local Government Investment Pool	\$ 2,597,353	\$ 2,597,353
Total	<u>\$ 2,597,353</u>	<u>\$ 2,597,353</u>

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 2—DEPOSITS AND INVESTMENTS: (CONTINUED)

External Investment Pool

The fair value of the positions in the external investment pool (Local Government Investment Pool) is the same as the value of the pool shares. As LGIP is not SEC registered, regulatory oversight of the pool rests with the Virginia State Treasury. LGIP is an amortized cost basis portfolio under the provision of GASB Statement No. 79. There are no withdrawal limitations or restrictions imposed on participants.

NOTE 3—CAPITAL ASSETS:

A summary of changes in capital assets for the year ended June 30, 2019 follows:

	Balance July 1, 2018	Increases	Decreases	Balance June 30, 2019
Capital assets not being depreciated:				
Land and improvements	\$ 5,943,439	\$ -	\$ -	\$ 5,943,439
Construction in progress	2,743,868	832,276	3,485,023	91,121
Total capital assets not being depreciated	<u>\$ 8,687,307</u>	<u>\$ 832,276</u>	<u>\$ 3,485,023</u>	<u>\$ 6,034,560</u>
Other Capital Assets:				
Buildings & fixtures	\$ 633,119	\$ 3,211,197	\$ -	\$ 3,844,316
Accumulated depreciation	(537,445)	(59,192)	-	(596,637)
Landfill site	5,665,500	-	-	5,665,500
Accumulated depreciation	(5,665,500)	-	-	(5,665,500)
Ivy Landfill equipment	1,436,865	319,266	572,306	1,183,825
Accumulated depreciation	(1,250,859)	(23,103)	(495,884)	(778,078)
Vehicles	731,319	87,724	25,000	794,043
Accumulated depreciation	(495,534)	(28,559)	(25,000)	(499,093)
Office equipment	16,736	-	-	16,736
Accumulated depreciation	(16,736)	-	-	(16,736)
Recycling facilities equipment	353,962	36,022	-	389,984
Accumulated depreciation	(273,023)	(9,976)	-	(282,999)
Other capital assets, net	<u>\$ 598,404</u>	<u>\$ 3,533,379</u>	<u>\$ 76,422</u>	<u>\$ 4,055,361</u>
Capital assets, net	<u>\$ 9,285,711</u>	<u>\$ 4,365,655</u>	<u>\$ 3,561,445</u>	<u>\$ 10,089,921</u>

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 3—CAPITAL ASSETS: (CONTINUED)

A summary of changes in capital assets for the year ended June 30, 2018 follows:

	Balance July 1, 2017	Increases	Decreases	Balance June 30, 2018
Capital assets not being depreciated:				
Land and improvements	\$ 5,943,439	\$ -	\$ -	\$ 5,943,439
Construction in progress	298,215	2,445,653	-	2,743,868
Total capital assets not being depreciated	\$ 6,241,654	\$ 2,445,653	\$ -	\$ 8,687,307
Other Capital Assets:				
Buildings & fixtures	\$ 633,119	\$ -	\$ -	\$ 633,119
Accumulated depreciation	(522,444)	(15,001)		(537,445)
Landfill site	5,665,500	-	-	5,665,500
Accumulated depreciation	(5,665,500)	-	-	(5,665,500)
Ivy Landfill equipment	1,478,235	-	41,370	1,436,865
Accumulated depreciation	(1,276,394)	(15,335)	(40,870)	(1,250,859)
Vehicles	702,729	28,590	-	731,319
Accumulated depreciation	(474,929)	(20,605)	-	(495,534)
Office equipment	16,736	-	-	16,736
Accumulated depreciation	(16,736)	-	-	(16,736)
Recycling facilities equipment	323,987	29,975	-	353,962
Accumulated depreciation	(265,398)	(7,625)	-	(273,023)
Other capital assets, net	\$ 598,905	\$ (1)	\$ 500	\$ 598,404
Capital assets, net	\$ 6,840,559	\$ 2,445,652	\$ 500	\$ 9,285,711

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 4—CONSTRUCTION IN PROGRESS:

At June 30, 2019 and 2018 the Authority had \$91,121 and \$2,743,868 construction in progress, respectively.

Details of construction in progress for the year ended June 30, 2019 are as follows:

	Balance July 1, 2018	Cost of Construction	Expense/ Transfer to Capital Assets	Balance June 30, 2019
New Ivy Transfer Station	\$ 2,449,479	\$ 553,324	\$ 3,002,803	\$ -
Landfill Cap Settlement Repairs	63,670	-	-	63,670
Flare Installation	137,986	278,952	416,938	-
Retainage on Construction in Progress	92,733		65,282	27,451
Total	<u>\$ 2,743,868</u>	<u>\$ 832,276</u>	<u>\$ 3,485,023</u>	<u>\$ 91,121</u>

Details of construction in progress for the year ended June 30, 2018 are as follows:

	Balance July 1, 2017	Cost of Construction	Expense/ Transfer to Capital Assets	Balance June 30, 2018
New Ivy Transfer Station	\$ 238,576	\$ 2,210,903	\$ -	\$ 2,449,479
Landfill Cap Settlement Repairs	47,492	16,178	-	63,670
Flare Installation	12,147	125,839	-	137,986
Retainage on Construction in Progress	-	92,733	-	92,733
Total	<u>\$ 298,215</u>	<u>\$ 2,445,653</u>	<u>\$ -</u>	<u>\$ 2,743,868</u>

NOTE 5—COMPENSATED ABSENCES:

Authority regular employees earn vacation leave each month at a scheduled rate in accordance with the years of service and sick leave at the rate of eight hours per month. Accumulated unpaid vacation amounts are accrued when incurred. At June 30, 2019 and 2018, the liability for accrued vacation leave was \$30,336 and \$33,691, respectively.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 6—PENSION PLAN:

Plan Description

All full-time, salaried permanent employees of the Authority are automatically covered by a VRS Retirement Plan upon employment. This is an agent multiple-employer plan administered by the Virginia Retirement System (the System) along with plans for other employer groups in the Commonwealth of Virginia. Members earn one month of service credit for each month they are employed and for which they and their employer pay contributions to VRS. Members are eligible to purchase prior service, based on specific criteria as defined in the Code of Virginia, as amended. Eligible prior service that may be purchased includes prior public service, active military service, certain periods of leave, and previously refunded service.

Benefit Structures

The System administers three different benefit structures for covered employees – Plan 1, Plan 2 and Hybrid. Each of these benefit structures has different eligibility criteria, as detailed below.

- a. Employees hired before July 1, 2010, vested as of January 1, 2013, and have not taken a refund, are covered under Plan 1, a defined benefit plan. Non-hazardous duty employees are eligible for an unreduced retirement benefit beginning at age 65 with at least 5 years of creditable service or age 50 with at least 30 years of creditable service. Non-hazardous duty employees may retire with a reduced benefit as early as age 55 with at least 5 years of creditable service or age 50 with at least 10 years of creditable service. Hazardous duty employees (law enforcement officers, firefighters, and sheriffs) are eligible for an unreduced benefit beginning at age 60 with at least 5 years of creditable service or age 50 with at least 25 years of creditable service. Hazardous duty employees may retire with a reduced benefit as early as age 50 with at least 5 years of creditable service.
- b. Employees hired on or after July 1, 2010, or their membership date is before July 1, 2010, and they were not vested as of January 1, 2013 are covered under Plan 2, a defined benefit plan. Non-hazardous duty employees are eligible for an unreduced benefit beginning at their normal social security retirement age with at least 5 years of creditable service or when the sum of their age and service equals 90. Non-hazardous duty employees may retire with a reduced benefit as early as age 60 with at least 5 years of creditable service. Hazardous duty employees are eligible for an unreduced benefit beginning at age 60 with at least 5 years of creditable service or age 50 with at least 25 years of creditable service. Hazardous duty employees may retire with a reduced benefit as early as age 50 with at least 5 years of creditable service.
- c. Non-hazardous duty employees hired on or after January 1, 2014 are covered by the Hybrid Plan combining the features of a defined benefit plan and a defined contribution plan. Plan 1 and Plan 2 members also had the option of opting into this plan during the election window held January 1 – April 30, 2014 with an effective date of July 1, 2014. Employees covered by this plan are eligible for an unreduced benefit beginning at their normal social security retirement age with at least 5 years of creditable service, or when the sum of their age and service equal 90. Employees may retire with a reduced benefit as early as age 60 with at least 5 years of creditable service. For the defined contribution component, members are eligible to receive distributions upon leaving employment, subject to restrictions.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 6—PENSION PLAN: (CONTINUED)

Average Final Compensation and Service Retirement Multiplier

The VRS defined benefit is a lifetime monthly benefit based on a retirement multiplier as a percentage of the employee's average final compensation multiplied by the employee's total creditable service. Under Plan 1, average final compensation is the average of the employee's 36 consecutive months of highest compensation and the multiplier is 1.7% for non-hazardous duty employees, 1.85% for sheriffs and regional jail superintendents, and 1.7% or 1.85% for hazardous duty employees as elected by the employer. Under Plan 2, average final compensation is the average of the employee's 60 consecutive months of highest compensation and the retirement multiplier is 1.65% for non-hazardous duty employees, 1.85% for sheriffs and regional jail superintendents, and 1.7% or 1.85% for hazardous duty employees as elected by the employer. Under the Hybrid Plan, average final compensation is the average of the employee's 60 consecutive months of highest compensation and the multiplier is 1.00%. For members who opted into the Hybrid Retirement Plan from Plan 1 or Plan 2, the applicable multipliers for those plans will be used to calculate the retirement benefit for service credited in those plans.

Cost-of-Living Adjustment (COLA) in Retirement and Death and Disability Benefits

Retirees with an unreduced benefit or with a reduced benefit with at least 20 years of creditable service are eligible for an annual COLA beginning July 1 after one full calendar year from the retirement date. Retirees with a reduced benefit and who have less than 20 years of creditable service are eligible for an annual COLA beginning on July 1 after one calendar year following the unreduced retirement eligibility date. Under Plan 1, the COLA cannot exceed 5.00%. Under Plan 2 and the Hybrid Plan, the COLA cannot exceed 3.00%. The VRS also provides death and disability benefits. Title 51.1 of the Code of Virginia, as amended, assigns the authority to establish and amend benefit provisions to the General Assembly of Virginia.

Employees Covered by Benefit Terms

As of the June 30, 2017 actuarial valuation, the following employees were covered by the benefit terms of the pension plan:

	<u>2019</u>	<u>2018</u>
Inactive members or their beneficiaries currently receiving benefits	17	13
Inactive members:		
Vested inactive members	1	1
Non-vested inactive members	7	7
Long-term disability (LTD)	0	0
Inactive members active elsewhere in VRS	<u>5</u>	<u>5</u>
Total inactive members	13	13
Active members	<u>9</u>	<u>9</u>
Total covered employees	<u><u>39</u></u>	<u><u>35</u></u>

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 6—PENSION PLAN: (CONTINUED)

Contributions

The contribution requirement for active employees is governed by §51.1-145 of the Code of Virginia, as amended, but may be impacted as a result of funding options provided to political subdivisions by the Virginia General Assembly. Employees are required to contribute 5.00% of their compensation toward their retirement.

The Authority's contractually required employer contribution rate for the year ended June 30, 2019 was 9.32% of covered employee compensation. This rate was based on an actuarially determined rate from an actuarial valuation as of June 30, 2017. The Authority's contractually required employer contribution rate for the year ended June 30, 2018 was 7.92% of covered employee compensation. This rate was based on an actuarially determined rate from an actuarial valuation as of June 30, 2015.

This rate, when combined with employee contributions, was expected to finance the costs of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability. Contributions to the pension plan from the Authority were \$54,531 and \$32,983 for the years ended June 30, 2019 and June 30, 2018, respectively.

Net Pension Liability

The net pension liability (NPL) is calculated separately for each employer and represents that particular employer's total pension liability determined in accordance with GASB Statement No. 68, less that employer's fiduciary net position. For the Authority, the net pension liability was measured as of June 30, 2018. The total pension liability used to calculate the net pension liability was determined by an actuarial valuation performed as of June 30, 2017 rolled forward to the measurement date of June 30, 2018.

Actuarial Assumptions – General Employees

The total pension liability for General Employees in the Authority's Retirement Plan was based on an actuarial valuation as of June 30, 2017, using the Entry Age Normal actuarial cost method and the following assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2018.

Inflation	2.5%
Salary increases, including inflation	3.5% – 5.35%
Investment rate of return	7.0%, net of pension plan investment expense, including inflation*

* Administrative expenses as a percent of the market value of assets for the last experience study were found to be approximately 0.06% of the market assets for all of the VRS plans. This would provide an assumed investment return rate for GASB purposes of slightly more than the assumed 7.0%. However, since the difference was minimal, and a more conservative 7.0% investment return assumption provided a projected plan net position that exceeded the projected benefit payments, the long-term expected rate of return on investments was assumed to be 7.0% to simplify preparation of pension liabilities.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 6—PENSION PLAN: (CONTINUED)

Actuarial Assumptions – General Employees: (Continued)

Mortality rates:

Largest 10 – Non-Hazardous Duty: 20% of deaths are assumed to be service related

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates at ages 81 and older projected with scale BB to 2020; males 95% of rates; females 105% of rates.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 3 years; females 1.0% increase compounded from ages 70 to 90.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years, 110% of rates; females 125% of rates.

All Others (Non 10 Largest) – Non-Hazardous Duty: 15% of deaths are assumed to be service related

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates at ages 81 and older projected with scale BB to 2020; males 95% of rates; females 105% of rates.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 3 years; females 1.0% increase compounded from ages 70 to 90.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years, 110% of rates; females 125% of rates.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 6—PENSION PLAN: (CONTINUED)

Actuarial Assumptions – General Employees: (Continued)

The actuarial assumptions used in the June 30, 2017 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016. Changes to the actuarial assumptions as a result of the experience study are as follows:

Largest 10 – Non-Hazardous Duty:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered rates at older ages and changed final retirement from 70 to 75
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Lowered rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 20%

All Others (Non 10 Largest) – Non-Hazardous Duty:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered rates at older ages and changed final retirement from 70 to 75
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Lowered rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 15%

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 6—PENSION PLAN: (CONTINUED)

Long-Term Expected Rate of Return

The long-term expected rate of return on pension System investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of pension System investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimate of arithmetic real rates of return for each major asset class are summarized in the following table:

<u>Asset Class (Strategy)</u>	<u>Target Allocation</u>	<u>Arithmetic Long-Term Expected Rate of Return</u>	<u>Weighted Average Long-Term Expected Rate of Return</u>
Public Equity	40.00%	4.54%	1.82%
Fixed Income	15.00%	0.69%	0.10%
Credit Strategies	15.00%	3.96%	0.59%
Real Assets	15.00%	5.76%	0.86%
Private Equity	<u>15.00%</u>	9.53%	<u>1.43%</u>
Total	<u>100.00%</u>		<u>4.80%</u>
		Inflation	<u>2.50%</u>
		*Expected arithmetic nominal return	<u>7.30%</u>

* The above allocation provides a one-year return of 7.30%. However, one-year returns do not take into account the volatility present in each of the asset classes. In setting the long-term expected return for the system, stochastic projections are employed to model future returns under various economic conditions. The results provide a range of returns over various time periods that ultimately provide a median return of 6.83%, including expected inflation of 2.50%.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements

At June 30, 2019 and 2018 (Continued)

NOTE 6—PENSION PLAN: (CONTINUED)***Discount Rate***

The discount rate used to measure the total pension liability was 7.00%. The projection of cash flows used to determine the discount rate assumed that System member contributions will be made per the VRS Statutes and the employer contributions will be made in accordance with the VRS funding policy at rates equal to the difference between actuarially determined contribution rates adopted by the VRS Board of Trustees and the member rate. Consistent with the phased-in funding provided by the General Assembly for state and teacher employer contributions; the Authority was also provided with an opportunity to use an alternative employer contribution rate. For the year ended June 30, 2018, the alternate rate was the employer contribution rate used in FY 2012 or 90% of the actuarially determined employer contribution rate from the June 30, 2015 actuarial valuations, whichever was greater. From July 1, 2018 on, participating employers are assumed to continue to contribute 100% of the actuarially determined contribution rates. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return was applied to all periods of projected benefit payments to determine the total pension liability.

Changes in Net Pension Liability

	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at June 30, 2017	\$ 2,547,363	\$ 2,450,542	\$ 96,821
Changes for the year:			
Service cost	\$ 46,031	\$ -	\$ 46,031
Interest	172,406	-	172,406
Changes in assumptions	-	-	-
Difference between expected and actual experience	69,836	-	69,836
Contributions - employer	-	32,983	(32,983)
Contributions - employee	-	20,620	(20,620)
Net investment income	-	178,448	(178,448)
Benefit payments, including refunds of employee contributions	(168,839)	(168,839)	-
Administrative expenses	-	(1,606)	1,606
Other changes	-	(156)	156
Net changes	\$ 119,434	\$ 61,450	\$ 57,984
Balances at June 30, 2018	\$ 2,666,797	\$ 2,511,992	\$ 154,805

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 6—PENSION PLAN: (CONTINUED)***Changes in Net Pension Liability: (Continued)***

	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at June 30, 2016	\$ 2,511,532	\$ 2,287,016	\$ 224,516
Changes for the year:			
Service cost	\$ 48,984	\$ -	\$ 48,984
Interest	170,210	-	170,210
Changes in assumptions	(29,532)	-	(29,532)
Difference between expected and actual experience	6,093	-	6,093
Contributions - employer	-	32,319	(32,319)
Contributions - employee	-	20,045	(20,045)
Net investment income	-	272,976	(272,976)
Benefit payments, including refunds of employee contributions	(159,924)	(159,924)	-
Administrative expenses	-	(1,651)	1,651
Other changes	-	(239)	239
Net changes	\$ 35,831	\$ 163,526	\$ (127,695)
Balances at June 30, 2017	\$ 2,547,363	\$ 2,450,542	\$ 96,821

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 6—PENSION PLAN: (CONTINUED)

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following presents the net pension liability of the Authority using the discount rate of 7.00%, as well as what the Authority's net pension liability would be if it were calculated using a discount rate that is one percentage point lower (6.00%) or one percentage point higher (8.00%) than the current rate:

Rivanna Solid Waste Authority's Net Pension Liability	Rate		
	1% Decrease (6.00%)	Current Discount (7.00%)	1% Increase (8.00%)
2019	\$ 406,885	\$ 154,805	\$ (62,479)
	Rate		
	1% Decrease (6.00%)	Current Discount (7.00%)	1% Increase (8.00%)
2018	\$ 357,043	\$ 96,821	\$ (127,047)

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

For the year ended June 30, 2019, the Authority recognized pension expense of \$51,657. At June 30, 2019, the Authority reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 18,486	\$ -
Change in assumptions	-	-
Net difference between projected and actual earnings on pension plan investments	-	19,635
Employer contributions subsequent to the measurement date	54,531	-
Total	\$ 73,017	\$ 19,635

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 6—PENSION PLAN: (CONTINUED)

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions (Continued)

For the year ended June 30, 2018, the Authority recognized pension expense of (\$5,670). At June 30, 2018, the Authority reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Differences between expected and actual experience	\$ 1,546	\$ -
Change in assumptions	-	7,493
Net difference between projected and actual earnings on pension plan investments	-	34,512
Employer contributions subsequent to the measurement date	<u>32,983</u>	<u>-</u>
Total	\$ <u>34,529</u>	\$ <u>42,005</u>

\$54,531 reported as deferred outflows of resources related to pensions resulting from the Authority's contributions subsequent to the measurement date will be recognized as a reduction of the Net Pension Liability in the fiscal year ending June 30, 2020. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense in future reporting periods as follows:

Year ended June 30

2020	\$ 27,963
2021	(1,366)
2022	(25,545)
2023	(2,201)
Thereafter	-

\$32,983 reported as deferred outflows of resources related to pensions resulting from the Authority's contributions subsequent to the measurement date will be recognized as a reduction of the Net Pension Liability in the fiscal year ending June 30, 2019. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense in future reporting periods as follows:

Year ended June 30

2019	\$ (29,628)
2020	11,678
2021	835
2022	(23,344)
Thereafter	-

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 6—PENSION PLAN: (CONTINUED)

Pension Plan Data

Information about the VRS Political Subdivision Retirement Plan is also available in the separately issued VRS 2018 Comprehensive Annual Financial Report (CAFR). A copy of the 2018 VRS CAFR may be downloaded from the VRS website at <http://www.varetire.org/Pdf/Publications/2018-annual-report.pdf>, or by writing to the System's Chief Financial Officer at P.O. Box 2500, Richmond, VA 23218-2500.

NOTE 7—CLOSURE AND POST-CLOSURE CARE COSTS:

State and federal laws and regulations require the Authority to place a final cover on its Ivy landfill site when it stops accepting waste and to perform certain maintenance and monitoring functions at the site for thirty years after closure. Although the landfill has stopped operating as a landfill, the Authority must recognize the estimated costs of closure corrective action and post-closure care as a liability on the financial statements. As work is completed, the liability recognized by the Virginia Department of Environmental Quality is reduced. The Authority is implementing a corrective action plan to correct detected environmental issues at the landfill. The amount recorded as accrued corrective action costs is \$3,207,555 at June 30, 2019. The \$2,440,309 reported as post-closure monitoring liability at June 30, 2019 represents the cumulative amount reported to date based on the use of 100% of the currently permitted cells at the landfill. In addition to the costs reported for the Ivy landfill site, the Authority has accrued closure costs for the Ivy transfer station in the amount of \$123,557. Total closure corrective action and post-closure care costs and post-closure monitoring costs accrued at June 30, 2019 are \$5,771,421. The Authority will recognize any remaining costs of closure corrective action and post-closure care and post-closure monitoring as the closure is completed. These amounts are based on what it would cost to perform all closure and post-closure care in 2019. Actual costs may be higher due to inflation, changes in technology, or changes in regulations.

The Authority is required by state and federal laws and regulations to meet certain financial assurance requirements. The Authority has opted to meet these requirements through agreements with the participating localities, County of Albemarle and City of Charlottesville. The agreement provides guarantees by the County of Albemarle in the amount of \$3,560,970 and the City of Charlottesville in the amount of \$1,959,914 for a total guarantee of \$5,520,884. The Authority expects that future inflation costs will be paid from interest earned on the annual contributions. However, if interest earnings are inadequate or additional post-closure care requirements are determined (due to changes in technology or applicable laws or regulations, for example), these costs may need to be covered by charges to future landfill users or other sources. Additionally, the Authority has set aside a cash account restricted for payment of the transfer station closure costs in the amount of \$123,557.

On behalf of the Authority, the City of Charlottesville and the County of Albemarle demonstrate financial assurance requirements for closure, post-closure care, and corrective action costs through the submission of a Local Government Financial Test to the Virginia Department of Environmental Quality in accordance with section 9VAC-20-70 of the Virginia Administrative Code.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements

At June 30, 2019 and 2018 (Continued)

NOTE 8—RISK MANAGEMENT:

The Authority is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; errors and omissions; injuries to employees; and natural disasters. The Authority joined together with other local governments in the Commonwealth to form the Virginia Association of Counties Group Self-Insurance Risk Pool, a public entity risk pool currently operating as a common risk management and insurance program for member governments. The Authority pays an annual premium to the pool for its workers compensation, property and liability insurance. The Agreement for Formation of the association provides that the association will be self-sustaining through member premiums. Settled claims have not exceeded pool coverage in any of the past three fiscal years.

NOTE 9—SUMMARY OF LONG-TERM OBLIGATIONS:

The following is a summary of long-term obligation transactions for the year ended June 30, 2019:

	Balance July 1, 2018	Additions	Reductions	Balance June 30, 2019	Due Within One Year
Landfill and transfer station closure/ corrective action/post-closure costs	\$ 5,897,214	\$ 403,839	\$ 529,632	\$ 5,771,421	\$ 483,443
Compensated absences	33,691	54,239	57,594	30,336	30,336
VERIP liability	113,454		37,483	75,971	37,483
Net pension liability	96,821	290,035	232,051	154,805	-
Net OPEB liability	36,000	6,000	6,000	36,000	-
Totals	\$ 6,177,180	\$ 754,113	\$ 862,760	\$ 6,068,533	\$ 551,262

The following is a summary of long-term obligation transactions for the year ended June 30, 2018:

	Balance July 1, 2017	Additions	Reductions	Balance June 30, 2018	Due Within One Year
Landfill and transfer station closure/ corrective action/postclosure costs	\$ 5,966,751	\$ 400,876	\$ 470,413	\$ 5,897,214	\$ 476,650
Compensated absences	29,662	35,055	31,026	33,691	30,000
VERIP liability	156,687	1,162	44,395	113,454	37,483
Net pension liability	224,516	227,177	354,872	96,821	-
Net OPEB liability	-	36,000	-	36,000	-
Totals	\$ 6,377,616	\$ 700,270	\$ 900,706	\$ 6,177,180	\$ 544,133

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 10—OTHER POSTEMPLOYMENT BENEFITS—HEALTH INSURANCE:

The Authority previously provided post-retirement healthcare benefits for employees who were eligible under a single-employer defined benefit plan. The Plan and benefits have been terminated. Therefore, the Authority has no assets or liabilities to report as of June 30, 2017 or subsequent years.

NOTE 11—GROUP LIFE INSURANCE (GLI) PROGRAM (OPEB PLAN):

Plan Description

The Group Life Insurance (GLI) Program was established pursuant to §51.1-500 et seq. of the Code of Virginia, as amended, and which provides the authority under which benefit terms are established or may be amended. All full-time, salaried permanent employees of the state agencies, teachers, and employees of participating political subdivisions are automatically covered by the VRS GLI Program upon employment. This is a cost-sharing multiple-employer plan administered by the Virginia Retirement System (the System), along with pensions and other OPEB plans, for public employer groups in the Commonwealth of Virginia.

In addition to the Basic GLI benefit, members are also eligible to elect additional coverage for themselves as well as a spouse or dependent children through the Optional GLI Program. For members who elect the optional group life insurance coverage, the insurer bills employers directly for the premiums. Employers deduct these premiums from members' paychecks and pay the premiums to the insurer. Since this is a separate and fully insured program, it is not included as part of the GLI Program OPEB.

The specific information for GLI OPEB, including eligibility, coverage and benefits is described below:

Eligible Employees

The GLI Program was established July 1, 1960, for state employees, teachers, and employees of political subdivisions that elect the program. Basic GLI coverage is automatic upon employment. Coverage ends for employees who leave their position before retirement eligibility or who take a refund of their accumulated retirement member contributions and accrued interest.

Benefit Amounts

The GLI Program is a defined benefit plan with several components. The natural death benefit is equal to the employee's covered compensation rounded to the next highest thousand and then doubled. The accidental death benefit is double the natural death benefit. In addition to basic natural and accidental death benefits, the program provides additional benefits provided under specific circumstances that include the following: accidental dismemberment benefit, safety belt benefit, repatriation benefit, felonious assault benefit, and accelerated death benefit option. The benefit amounts are subject to a reduction factor. The benefit amount reduces by 25% on January 1 following one calendar year of separation. The benefit amount reduces by an additional 25% on each subsequent January 1 until it reaches 25% of its original value. For covered members with at least 30 years of creditable service, the minimum benefit payable was set at \$8,000 by statute. This amount is increased annually based on the VRS Plan 2 cost-of-living adjustment and was increased to \$8,279 effective July 1, 2018.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 11—GROUP LIFE INSURANCE (GLI) PROGRAM (OPEB PLAN): (CONTINUED)

Contributions

The contribution requirements for the GLI Program are governed by §51.1-506 and §51.1-508 of the Code of Virginia, as amended, but may be impacted as a result of funding provided to state agencies and school divisions by the Virginia General Assembly. The total rate for the GLI Program was 1.31% of covered employee compensation. This was allocated into an employee and an employer component using a 60/40 split. The employee component was 0.79% (1.31% x 60%) and the employer component was 0.52% (1.31% x 40%). Employers may elect to pay all or part of the employee contribution; however, the employer must pay all of the employer contribution. Each employer's contractually required employer contribution rate for the year ended June 30, 2019 was 0.52% of covered employee compensation. This rate was based on an actuarially determined rate from an actuarial valuation as of June 30, 2017. The actuarially determined rate, when combined with employee contributions, was expected to finance the costs of benefits payable during the year, with an additional amount to finance any unfunded accrued liability. Contributions to the GLI Program from the entity were \$3,428 and \$2,333 for the years ended June 30, 2019 and June 30, 2018, respectively.

GLI OPEB Liabilities, GLI OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to the GLI Program OPEB

At June 30, 2019, the entity reported a liability of \$36,000 for its proportionate share of the Net GLI OPEB Liability. The Net GLI OPEB Liability was measured as of June 30, 2018 and the total GLI OPEB liability used to calculate the Net GLI OPEB Liability was determined by an actuarial valuation as of that date. The covered employer's proportion of the Net GLI OPEB Liability was based on the covered employer's actuarially determined employer contributions to the GLI Program for the year ended June 30, 2018 relative to the total of the actuarially determined employer contributions for all participating employers. At June 30, 2018, the participating employer's proportion was 0.00234% as compared to 0.00233% at June 30, 2017.

At June 30, 2018, the entity reported a liability of \$36,000 for its proportionate share of the Net GLI OPEB Liability. The Net GLI OPEB Liability was measured as of June 30, 2017 and the total GLI OPEB liability used to calculate the Net GLI OPEB Liability was determined by an actuarial valuation as of that date. The covered employer's proportion of the Net GLI OPEB Liability was based on the covered employer's actuarially determined employer contributions to the Group Life Insurance Program for the year ended June 30, 2017 relative to the total of the actuarially determined employer contributions for all participating employers. At June 30, 2017, the participating employer's proportion was .00233% as compared to .00235% at June 30, 2016.

For the years ended June 30, 2019 and 2018, the participating employer recognized GLI OPEB expense of \$0. Since there was a change in proportionate share between measurement dates, a portion of the GLI OPEB expense was related to deferred amounts from changes in proportion.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 11—GROUP LIFE INSURANCE (GLI) PROGRAM (OPEB PLAN): (CONTINUED)***GLI OPEB Liabilities, GLI OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to the GLI Program OPEB: (Continued)***

At June 30, 2019, the employer reported deferred outflows of resources and deferred inflows of resources related to the GLI OPEB from the following sources:

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Differences between expected and actual experience	\$ 2,000	\$ 1,000
Net difference between projected and actual earnings on GLI OPEB program investments	-	1,000
Change in assumptions	-	1,000
Changes in proportion	-	-
Employer contributions subsequent to the measurement date	<u>3,428</u>	<u>-</u>
Total	\$ <u>5,428</u>	\$ <u>3,000</u>

At June 30, 2018, the employer reported deferred outflows of resources and deferred inflows of resources related to the GLI OPEB from the following sources:

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Differences between expected and actual experience	\$ -	\$ 1,000
Net difference between projected and actual earnings on GLI OPEB program investments	-	1,000
Change in assumptions	-	2,000
Changes in proportion	-	-
Employer contributions subsequent to the measurement date	<u>2,333</u>	<u>-</u>
Total	\$ <u>2,333</u>	\$ <u>4,000</u>

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 11—GROUP LIFE INSURANCE (GLI) PROGRAM (OPEB PLAN): (CONTINUED)

GLI OPEB Liabilities, GLI OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to the GLI Program OPEB: (Continued)

\$3,428 reported as deferred outflows of resources related to the GLI OPEB resulting from the employer's contributions subsequent to the measurement date will be recognized as a reduction of the Net GLI OPEB Liability in the fiscal year ending June 30, 2020. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to the GLI OPEB will be recognized in the GLI OPEB expense in future reporting periods as follows:

<u>Year Ended June 30</u>		
2020	\$	(1,000)
2021		-
2022		-
2023		-
2024		-
Thereafter		-

\$2,333 reported as deferred outflows of resources related to the GLI OPEB resulting from the employer's contributions subsequent to the measurement date will be recognized as a reduction of the Net GLI OPEB Liability in the fiscal year ending June 30, 2019. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to the GLI OPEB will be recognized in the GLI OPEB expense in future reporting periods as follows:

<u>Year Ended June 30</u>		
2019	\$	(1,038)
2020		(1,038)
2021		(1,038)
2022		(612)
2023		(275)
Thereafter		-

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 11—GROUP LIFE INSURANCE (GLI) PROGRAM (OPEB PLAN): (CONTINUED)

Actuarial Assumptions

The total GLI OPEB liability was based on an actuarial valuation as of June 30, 2017, using the Entry Age Normal actuarial cost method and the following assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2018.

Inflation	2.5%
Salary increases, including inflation:	
General state employees	3.5%–5.35%
Teachers	3.5%–5.95%
SPORS employees	3.5%–4.75%
VaLORS employees	3.5%–4.75%
JRS employees	4.5%
Locality - General employees	3.5%–5.35%
Locality - Hazardous Duty employees	3.5%–4.75%
Investment rate of return	7.0%, net of investment expenses, including inflation*

*Administrative expenses as a percent of the market value of assets for the last experience study were found to be approximately 0.06% of the market assets for all of the VRS plans. This would provide an assumed investment return rate for GASB purposes of slightly more than the assumed 7.0%. However, since the difference was minimal, and a more conservative 7.0% investment return assumption provided a projected plan net position that exceeded the projected benefit payments, the long-term expected rate of return on investments was assumed to be 7.0% to simplify preparation of OPEB liabilities.

Mortality Rates – General State Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males set back 1 year, 85% of rates; females set back 1 year.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 1 year; females set back 1 year with 1.5% increase compounded from ages 70 to 85.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males 115% of rates; females 130% of rates.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 11—GROUP LIFE INSURANCE (GLI) PROGRAM (OPEB PLAN): (CONTINUED)

Actuarial Assumptions: (Continued)

Mortality Rates – General State Employees: (Continued)

The actuarial assumptions used in the June 30, 2017 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016. Changes to the actuarial assumptions as a result of the experience study are as follows:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered rates at older ages and changed final retirement from 70 to 75
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 25%

Mortality Rates – Teachers

Pre-Retirement:

RP-2014 White Collar Employee Rates to age 80, White Collar Healthy Annuitant Rates at ages 81 and older projected with scale BB to 2020.

Post-Retirement:

RP-2014 White Collar Employee Rates to age 49, White Collar Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males 1% increase compounded from ages 70 to 90; females set back 3 years with 1.5% increase compounded from ages 65 to 70 and 2.0% increase compounded from ages 75 to 90.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; 115% of rates for males and females.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 11—GROUP LIFE INSURANCE (GLI) PROGRAM (OPEB PLAN): (CONTINUED)

Actuarial Assumptions: (Continued)

Mortality Rates – Teachers: (Continued)

The actuarial assumptions used in the June 30, 2017 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016. Changes to the actuarial assumptions as a result of the experience study are as follows:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered rates at older ages and changed final retirement from 70 to 75
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change

Mortality Rates – SPORS Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males 90% of rates; females set forward 1 year.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 1 year with 1.0% increase compounded from ages 70 to 90; females set forward 3 years.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years; unisex using 100% male.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 11—GROUP LIFE INSURANCE (GLI) PROGRAM (OPEB PLAN): (CONTINUED)

Actuarial Assumptions: (Continued)

Mortality Rates – SPORS Employees: (Continued)

The actuarial assumptions used in the June 30, 2017 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016. Changes to the actuarial assumptions as a result of the experience study are as follows:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020 and reduced margin for future improvement in accordance with experience
Retirement Rates	Increased age 50 rates and lowered rates at older ages
Withdrawal Rates	Adjusted rates to better fit experience
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change
Line of Duty Disability	Increased rate from 60% to 85%

Mortality Rates – VaLORS Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males 90% of rates; females set forward 1 year.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 1 year with 1.0% increase compounded from ages 70 to 90; females set forward 3 years.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years; unisex using 100% male.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 11—GROUP LIFE INSURANCE (GLI) PROGRAM (OPEB PLAN): (CONTINUED)

Actuarial Assumptions: (Continued)

Mortality Rates – VaLORS Employees: (Continued)

The actuarial assumptions used in the June 30, 2017 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016. Changes to the actuarial assumptions as a result of the experience study are as follows:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020 and reduced margin for future improvement in accordance with experience
Retirement Rates	Increased age 50 rates and lowered rates at older ages
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change
Line of Duty Disability	Decreased rate from 50% to 35%

Mortality Rates – JRS Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males set back 1 year, 85% of rates; females set back 1 year.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 1 year; females set back 1 year with 1.5% compounding increase from ages 70 to 85.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males 115% of rates; females 130% of rates.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 11—GROUP LIFE INSURANCE (GLI) PROGRAM (OPEB PLAN): (CONTINUED)

Actuarial Assumptions: (Continued)

Mortality Rates – JRS Employees: (Continued)

The actuarial assumptions used in the June 30, 2017 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016. Changes to the actuarial assumptions as a result of the experience study are as follows:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Decreased rates at first retirement eligibility
Withdrawal Rates	No change
Disability Rates	Removed disability rates
Salary Scale	No change

Mortality Rates – Largest Ten Locality Employers – General Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males 95% of rates; females 105% of rates.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 3 years; females 1.0% increase compounded from ages 70 to 90.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years, 110% of rates; females 125% of rates.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 11—GROUP LIFE INSURANCE (GLI) PROGRAM (OPEB PLAN): (CONTINUED)

Actuarial Assumptions: (Continued)

Mortality Rates – Largest Ten Locality Employers – General Employees: (Continued)

The actuarial assumptions used in the June 30, 2017 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016. Changes to the actuarial assumptions as a result of the experience study are as follows:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered retirement rates at older ages and extended final retirement age from 70 to 75
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year
Disability Rates	Lowered disability rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 20%

Mortality Rates – Non-Largest Ten Locality Employers – General Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males 95% of rates; females 105% of rates.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 3 years; females 1.0% increase compounded from ages 70 to 90.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years, 110% of rates; females 125% of rates.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 11—GROUP LIFE INSURANCE (GLI) PROGRAM (OPEB PLAN): (CONTINUED)

Actuarial Assumptions: (Continued)

Mortality Rates – Non-Largest Ten Locality Employers – General Employees: (Continued)

The actuarial assumptions used in the June 30, 2017 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016. Changes to the actuarial assumptions as a result of the experience study are as follows:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered retirement rates at older ages and extended final retirement age from 70 to 75
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year
Disability Rates	Lowered disability rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 15%

Mortality Rates – Largest Ten Locality Employers – Hazardous Duty Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males 90% of rates; females set forward 1 year.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 1 year with 1.0% increase compounded from ages 70 to 90; females set forward 3 years.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years; unisex using 100% male.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 11—GROUP LIFE INSURANCE (GLI) PROGRAM (OPEB PLAN): (CONTINUED)

Actuarial Assumptions: (Continued)

Mortality Rates – Largest Ten Locality Employers – Hazardous Duty Employees: (Continued)

The actuarial assumptions used in the June 30, 2017 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016. Changes to the actuarial assumptions as a result of the experience study are as follows:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered retirement rates at older ages
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year
Disability Rates	Increased disability rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 60% to 70%

Mortality Rates – Non-Largest Ten Locality Employers – Hazardous Duty Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males 90% of rates; females set forward 1 year.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 1 year with 1.0% increase compounded from ages 70 to 90; females set forward 3 years.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years; unisex using 100% male.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 11—GROUP LIFE INSURANCE (GLI) PROGRAM (OPEB PLAN): (CONTINUED)

Actuarial Assumptions: (Continued)

Mortality Rates – Non-Largest Ten Locality Employers – Hazardous Duty Employees: (Continued)

The actuarial assumptions used in the June 30, 2017 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016. Changes to the actuarial assumptions as a result of the experience study are as follows:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Increased age 50 rates and lowered rates at older ages
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change
Line of Duty Disability	Decreased rate from 60% to 45%

NET GLI OPEB Liability

The net OPEB liability (NOL) for the GLI Program represents the program's total OPEB liability determined in accordance with GASB Statement No. 74, less the associated fiduciary net position. As of the measurement date of June 30, 2018, NOL amounts for the GLI Program are as follows (amounts expressed in thousands):

		GLI OPEB Program
Total GLI OPEB Liability	\$	3,113,508
Plan Fiduciary Net Position		1,594,773
Employers' Net GLI OPEB Liability (Asset)	\$	<u>1,518,735</u>
Plan Fiduciary Net Position as a Percentage of the Total GLI OPEB Liability		51.22%

The net OPEB liability (NOL) for the Group Life Insurance Program represents the program's total OPEB liability determined in accordance with GASB Statement No. 74, less the associated fiduciary net position. As of June 30, 2017, NOL amounts for the Group Life Insurance Program is as follows (amounts expressed in thousands):

		GLI OPEB Program
Total GLI OPEB Liability	\$	2,942,426
Plan Fiduciary Net Position		1,437,586
Employers' Net GLI OPEB Liability (Asset)	\$	<u>1,504,840</u>
Plan Fiduciary Net Position as a Percentage of the Total GLI OPEB Liability		48.86%

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 11—GROUP LIFE INSURANCE (GLI) PROGRAM (OPEB PLAN): (CONTINUED)

NET GLI OPEB Liability: (Continued)

The total GLI OPEB liability is calculated by the System's actuary, and each plan's fiduciary net position is reported in the System's financial statements. The net GLI OPEB liability is disclosed in accordance with the requirements of GASB Statement No. 74 in the System's notes to the financial statements and required supplementary information.

Long-Term Expected Rate of Return

The long-term expected rate of return on the System's investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of System's investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimate of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class (Strategy)	Target Allocation	Arithmetic Long-term Expected Rate of Return	Weighted Average Long-term Expected Rate of Return
Public Equity	40.00%	4.54%	1.82%
Fixed Income	15.00%	0.69%	0.10%
Credit Strategies	15.00%	3.96%	0.59%
Real Assets	15.00%	5.76%	0.86%
Private Equity	15.00%	9.53%	1.43%
Total	100.00%		4.80%
		Inflation	2.50%
		*Expected arithmetic nominal return	7.30%

*The above allocation provides a one-year return of 7.30%. However, one-year returns do not take into account the volatility present in each of the asset classes. In setting the long-term expected return for the system, stochastic projections are employed to model future returns under various economic conditions. The results provide a range of returns over various time periods that ultimately provide a median return of 6.83%, including expected inflation of 2.50%.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 11—GROUP LIFE INSURANCE (GLI) PROGRAM (OPEB PLAN): (CONTINUED)

Discount Rate

The discount rate used to measure the total GLI OPEB liability was 7.00%. The projection of cash flows used to determine the discount rate assumed that member contributions will be made per the VRS guidance and the employer contributions will be made in accordance with the VRS funding policy at rates equal to the difference between actuarially determined contribution rates adopted by the VRS Board of Trustees and the member rate. Through the fiscal year ended June 30, 2018, the rate contributed by the entity for the GLI OPEB will be subject to the portion of the VRS Board-certified rates that are funded by the Virginia General Assembly which was 100% of the actuarially determined contribution rate. From July 1, 2018 on, employers are assumed to continue to contribute 100% of the actuarially determined contribution rates. Based on those assumptions, the GLI OPEB's fiduciary net position was projected to be available to make all projected future benefit payments of eligible employees. Therefore, the long-term expected rate of return was applied to all periods of projected benefit payments to determine the total GLI OPEB liability.

Sensitivity of the Employer's Proportionate Share of the Net GLI OPEB Liability to Changes in the Discount Rate

The following presents the employer's proportionate share of the net GLI OPEB liability using the discount rate of 7.00%, as well as what the employer's proportionate share of the net GLI OPEB liability would be if it were calculated using a discount rate that is one percentage point lower (6.00%) or one percentage point higher (8.00%) than the current rate:

Authority's proportionate share of the GLI Program Net OPEB Liability	Rate		
	1% Decrease	Current Discount	1% Increase
	(6.00%)	(7.00%)	(8.00%)
2019	\$ 47,000	\$ 36,000	\$ 27,000
	Rate		
	1% Decrease	Current Discount	1% Increase
	(6.00%)	(7.00%)	(8.00%)
2018	\$ 46,000	\$ 36,000	\$ 27,000

GLI Program Fiduciary Net Position

Detailed information about the GLI Program's Fiduciary Net Position is available in the separately issued VRS 2018 Comprehensive Annual Financial Report (CAFR). A copy of the 2018 VRS CAFR may be downloaded from the VRS website at <http://www.varetire.org/Pdf/Publications/2018-annual-report.pdf>, or by writing to the System's Chief Financial Officer at P.O. Box 2500, Richmond, VA, 23218-2500.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 12—RELATED PARTIES:

Rivanna Solid Waste Authority (RSWA) and Rivanna Water and Sewer Authority (RWSA) share office space and administrative staff. Procedures are in place to ensure proper segregation of funds, purchasing activity, personnel and similar matters. RSWA pays RWSA monthly for its share of joint administrative expenses, which totaled \$460,000 in FY 2019 and \$409,000 in FY 2018 and for leachate acceptance and treatment of \$4,285 in FY 2019 and \$1,563 in FY 2018. Rivanna Solid Waste Authority billed Rivanna Water & Sewer Authority \$40,547 for hauling and tipping fees in FY 2019 and \$51,889 in the previous year. RSWA owed RWSA \$49,683 and \$36,867 at June 30, 2019 and 2018, respectively.

NOTE 13—VOLUNTARY EARLY RETIREMENT INCENTIVE PROGRAM:

Rivanna Solid Waste Authority has a Voluntary Early Retirement Incentive Program (VERIP) which provides for monthly payments to eligible employees for a period of up to five years after early retirement or until age 65, whichever comes first. Participants in the VERIP must be regular full-time employees eligible for early or full retirement under the provisions of the Virginia Retirement System (VRS) who have been employed by the Authority for 10 of the last 13 years prior to retirement. Employees retiring under the disability provisions of VRS and/or Social Security are not eligible for the VERIP. VERIP participants receive a stipend equal to the difference between (1) the annual VRS retirement benefit amount as reduced for early VRS retirement if appropriate and (2) the recomputed annual VRS benefit with the addition of the lesser of five more years of service or the number of additional years needed to reach age 65. The stipend is paid on a monthly basis. The participant may also receive a monthly payment equal to the amount of the Board's contribution toward an employee's health insurance as long as the employee is covered by VERIP benefits. Applications for the VERIP must be submitted to the Executive Director for approval. The Authority's estimated VERIP liability as of June 30, 2019 and 2018 was \$75,971 and \$113,454, respectively. The amount payable within the next year is \$37,483.

NOTE 14—UPCOMING FINANCIAL REPORTING PRONOUNCEMENTS:

Statement No. 84, Fiduciary Activities, establishes criteria for identifying fiduciary activities of all state and local governments for accounting and financial reporting purposes and how those activities should be reported. The requirements of this Statement are effective for reporting periods beginning after December 15, 2018.

Statement No. 87, Leases, requires recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows of resources or outflows of resources based on the payment provisions of the contract. It establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. The requirements of this Statement are effective for reporting periods beginning after December 15, 2019.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 14–UPCOMING FINANCIAL REPORTING PRONOUNCEMENTS: (CONTINUED)

Statement No. 89, Accounting for Interest Cost Incurred Before the End of a Construction Period, provides guidance for reporting capital assets and the cost of borrowing for a reporting period and simplifies accounting for interest cost incurred before the end of a construction period. The requirements of this Statement are effective for reporting periods beginning after December 15, 2019.

Statement No. 90, Majority Equity Interests – An Amendment of GASB Statements No. 14 and No. 61, provides guidance for reporting a government's majority equity interest in a legally separate organization and for reporting financial statement information for certain component units. The requirements of this Statement are effective for reporting periods beginning after December 15, 2018.

Statement No. 91, Conduit Debt Obligations, provides a single method of reporting conduit debt obligations by issuers and eliminates diversity in practice associated with (1) commitments extended by issuers, (2) arrangements associated with conduit debt obligations, and (3) related note disclosures. The requirements of this Statement are effective for reporting periods beginning after December 15, 2020.

Management is currently evaluating the relevance of these standards to the Authority and the impact they will have on the financial statements if adopted.

NOTE 15–CONSTRUCTION COMMITMENTS:

Rivanna Solid Waste Authority had no significant construction contract commitments for capital projects as of June 30, 2019 and the following commitments as of June 30, 2018:

<u>Project</u>	<u>Incurred To Date</u>	<u>Remaining Commitment</u>
New Ivy Transfer Station	\$ 1,854,658	\$ 392,939
Flare Installation	110,865	259,046

These contracts give the Authority the right to terminate the contract for any reason.

RIVANNA SOLID WASTE AUTHORITY

Notes to the Financial Statements
At June 30, 2019 and 2018 (Continued)

NOTE 16—RESTATEMENT OF BEGINNING NET POSITION:

The Authority implemented the financial reporting provisions of Governmental Accounting Standards Board Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, during the fiscal year ended June 30, 2018. This Statement establishes standards for measuring and recognizing liabilities, deferred outflows of resources, deferred inflows of resources, and expense/expenditures related to postemployment benefits other than pensions (other postemployment benefits or OPEB). Note disclosure and required supplementary information requirements about OPEB are also addressed. The requirements of this Statement will improve accounting and financial reporting by state and local governments for OPEB. In addition, the Authority implemented Governmental Accounting Standards Board Statement No. 85, *Omnibus 2017*, during the fiscal year ended June 30, 2018. This Statement addresses practice issues identified during implementation and application of certain GASB statements for a variety of topics including issues related to blending component units, goodwill, fair value measurement and application, and postemployment benefits (pensions and other postemployment benefits (OPEB)). The implementation of these Statements resulted in the following restatement of net position:

	<u>Amount</u>
Net Position as of July 1, 2017, previously reported	\$ 4,884,972
OPEB liability restated as of July 1, 2017 - group life insurance	<u>(40,000)</u>
Net Position as of July 1, 2017, as restated	\$ <u><u>4,844,972</u></u>

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Required Supplementary Information

RIVANNA SOLID WASTE AUTHORITY

 Schedule of Changes in Net Pension Liability and Related Ratios
 For the Plan Years Ended June 30, 2014 through June 30, 2018

	2018	2017	2016	2015	2014
Total pension liability					
Service cost	\$ 46,031	\$ 48,984	\$ 47,552	\$ 44,891	\$ 57,148
Interest	172,406	170,210	167,674	172,433	165,972
Difference between expected and actual experience	69,836	6,093	(34,352)	(157,193)	-
Changes in assumptions	-	(29,532)	-	-	-
Benefit payments, including refunds of employee contributions	(168,839)	(159,924)	(129,362)	(126,868)	(134,796)
Net change in total pension liability	\$ 119,434	\$ 35,831	\$ 51,512	\$ (66,737)	\$ 88,324
Total pension liability - beginning	2,547,363	2,511,532	2,460,020	2,526,757	2,438,433
Total pension liability - ending (a)	\$ 2,666,797	\$ 2,547,363	\$ 2,511,532	\$ 2,460,020	\$ 2,526,757
Plan fiduciary net position					
Contributions - employer	\$ 32,983	\$ 32,319	\$ 40,825	\$ 38,370	\$ 44,486
Contributions - employee	20,620	20,045	20,729	19,552	18,368
Net investment income	178,448	272,976	38,903	103,238	317,095
Benefit payments, including refunds of employee contributions	(168,839)	(159,924)	(129,362)	(126,868)	(134,796)
Administrative expense	(1,606)	(1,651)	(1,465)	(1,462)	(1,754)
Other	(156)	(239)	(17)	(21)	17
Net change in plan fiduciary net position	\$ 61,450	\$ 163,526	\$ (30,387)	\$ 32,809	\$ 243,416
Plan fiduciary net position - beginning	2,450,542	2,287,016	2,317,403	2,284,594	2,041,178
Plan fiduciary net position - ending (b)	\$ 2,511,992	\$ 2,450,542	\$ 2,287,016	\$ 2,317,403	\$ 2,284,594
Authority's net pension liability - ending (a) - (b)	\$ 154,805	\$ 96,821	\$ 224,516	\$ 142,617	\$ 242,163
Plan fiduciary net position as a percentage of the total pension liability	94.20%	96.20%	91.06%	94.20%	90.42%
Covered payroll	\$ 441,868	\$ 429,354	\$ 422,207	\$ 395,326	\$ 367,351
Authority's net pension liability as a percentage of covered payroll	35.03%	22.55%	53.18%	36.08%	65.92%

This schedule is intended to report information for 10 years. Fiscal year 2015 is the first year for this presentation, no other data is available. Additional years will be included when available.

RIVANNA SOLID WASTE AUTHORITY**Schedule of Employer Contributions-Pension Plan
For the Years Ended June 30, 2010 through June 30, 2019**

Fiscal Year	Contractually Required Contribution (1)	Contributions in Relation to Contractually Required Contribution (2)	Contribution Deficiency (Excess) (3)	Employer's Covered Payroll (4)	Contributions as a % of Covered Payroll (5)
2019	\$ 54,531	\$ 54,531	\$ -	\$ 653,939	8.34%
2018	32,983	32,983	-	441,868	7.46%
2017	32,319	32,319	-	429,354	7.53%
2016	40,825	40,825	-	422,207	9.67%
2015	38,370	38,370	-	395,326	9.71%
2014	44,486	44,486	-	367,351	12.11%
2013	66,260	66,260	-	547,151	12.11%
2012	57,640	57,640	-	506,945	11.37%
2011	56,790	56,790	-	499,468	11.37%
2010	58,158	58,158	-	592,844	9.81%

RIVANNA SOLID WASTE AUTHORITY

Notes to Required Supplementary Information-Pension Plan
For the Year Ended June 30, 2019

Changes of benefit terms – There have been no actuarially material changes to the System benefit provisions since the prior actuarial valuation.

Changes of assumptions – The following changes in actuarial assumptions were made effective June 30, 2016 based on the most recent experience study of the System for the four-year period ending June 30, 2016:

Largest 10 – Non-Hazardous Duty:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered rates at older ages and changed final retirement from 70 to 75
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Lowered rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 20%

All Others (Non 10 Largest) – Non-Hazardous Duty:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered rates at older ages and changed final retirement from 70 to 75
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Lowered rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 15%

RIVANNA SOLID WASTE AUTHORITY

Schedule of Authority's Share of Net OPEB Liability
Group Life Insurance Program
For the Measurement Dates of June 30, 2018 and 2017

Date (1)	Employer's Portion of the Net GLI OPEB Liability (Asset) (2)	Employer's Proportionate Share of the Net GLI OPEB Liability (Asset) (3)	Employer's Covered Payroll (4)	Employer's Proportionate Share of the Net GLI OPEB Liability (Asset) as a Percentage of Covered Payroll (3)/(4) (5)	Plan Fiduciary Net Position as a Percentage of Total GLI OPEB Liability (6)
2018	0.00234% \$	36,000 \$	441,868	8.15%	51.22%
2017	0.00233%	36,000	429,354	8.38%	48.86%

Schedule is intended to show information for 10 years. Information prior to 2017 is unavailable.
However, additional years will be included as they become available.

RIVANNA SOLID WASTE AUTHORITY

Schedule of Employer Contributions

Group Life Insurance Program

For the Years Ended June 30, 2017 through June 30, 2019

Date	Contributions in Relation to					Contributions as a % of Covered Payroll (5)
	Contractually Required Contribution (1)	Contractually Required Contribution (2)	Contribution Deficiency (Excess) (3)	Employer's Covered Payroll (4)		
2019	\$ 3,428	\$ 3,428	\$ -	\$ 653,939		0.52%
2018	2,333	2,333	-	441,868		0.53%
2017	2,233	2,233	-	429,354		0.52%

Schedule is intended to show information for 10 years. Information prior to 2017 is unavailable.

However, additional years will be included as they become available.

Notes to Required Supplementary Information
 Group Life Insurance Program
 For the Year Ended June 30, 2019

Changes of benefit terms – There have been no actuarially material changes to the System benefit provisions since the prior actuarial valuation.

Changes of assumptions – The following changes in actuarial assumptions were made effective June 30, 2016 based on the most recent experience study of the System for the four-year period ending June 30, 2016:

General State Employees

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered rates at older ages and changed final retirement from 70 to 75
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 25%

Teachers

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered rates at older ages and changed final retirement from 70 to 75
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change

SPORS Employees

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020 and reduced margin for future improvement in accordance with experience
Retirement Rates	Increased age 50 rates and lowered rates at older ages
Withdrawal Rates	Adjusted rates to better fit experience
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change
Line of Duty Disability	Increased rate from 60% to 85%

VaLORS Employees

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020 and reduced margin for future improvement in accordance with experience
Retirement Rates	Increased age 50 rates and lowered rates at older ages
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Adjusted rates to better fit experience
Salary Scale	No change
Line of Duty Disability	Decreased rate from 50% to 35%

Notes to Required Supplementary Information
Group Life Insurance Program
For the Year Ended June 30, 2019 (Continued)

JRS Employees

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Decreased rates at first retirement eligibility
Withdrawal Rates	No change
Disability Rates	Removed disability rates
Salary Scale	No change

Largest Ten Locality Employers - General Employees

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered retirement rates at older ages and extended final retirement age from 70 to 75
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year
Disability Rates	Lowered disability rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 20%

Non-Largest Ten Locality Employers - General Employees

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered retirement rates at older ages and extended final retirement age from 70 to 75
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year
Disability Rates	Lowered disability rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 15%

Largest Ten Locality Employers - Hazardous Duty Employees

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered retirement rates at older ages
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year
Disability Rates	Increased disability rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 60% to 70%

Non-Largest Ten Locality Employers - Hazardous Duty Employees

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Increased age 50 rates and lowered rates at older ages
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change
Line of Duty Disability	Decreased rate from 60% to 45%

Statistical Section

Contents

Tables

Financial Trends

This table contains trend information to help the reader understand how the the Authority's financial performance has changed over time.

1

Revenue, Expenses, Rates and Tonnage Information

These tables contain information to help the reader assess the factors affecting the Authority's change in revenues and it's ability to generate revenues as well as operating expenses the Authority generates.

2-6

Debt Capacity

This table presents information to help the reader assess the affordability of the Authority's current levels of outstanding debt and the Authority's ability to issue debt in the future.

7

Demographic and Economic Information

These tables offer demographic and economic indicators to help the reader understand the environment within which the Authority's financial activities take place and to help make comparisons over time.

8-9

Operating Information

These tables contain information about the Authority's operations and resources to help the reader understand how the Authority's financial information relates to the activities it performs.

10-11

Other Information

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Sources: Unless otherwise noted, the information in these tables is derived from the comprehensive annual financial reports for the relevant year.

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Net Position by Component
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Net investment in capital assets	\$ 10,062,470	\$ 9,192,978	\$ 6,840,559	\$ 6,268,650	\$ 6,246,134	\$ 6,232,154	\$ 6,333,722	\$ 6,488,690	\$ 6,566,617	\$ 6,720,624
Unrestricted	(2,777,754)	(2,677,368)	(1,955,587)	(1,837,329)	(2,412,362)	(2,437,339)	493,493	144,228	1,308,953	1,345,007
Total net position	<u>\$ 7,284,716</u>	<u>\$ 6,515,610</u>	<u>\$ 4,884,972</u>	<u>\$ 4,431,321</u>	<u>\$ 3,833,772</u>	<u>\$ 3,794,815</u>	<u>\$ 6,827,215</u>	<u>\$ 6,632,918</u>	<u>\$ 7,875,570</u>	<u>\$ 8,065,631</u>

RIVANNA SOLID WASTE AUTHORITY

Table 2

Changes in Net Position
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Operating revenues:										
Tipping fees	\$ 1,321,174	\$ 878,841	\$ 876,382	\$ 723,803	\$ 685,784	\$ 693,865	\$ 915,834	\$ 862,422	\$ 1,040,183	\$ 1,900,713
Recycling revenues	152,871	195,912	227,614	138,239	126,178	153,443	174,674	236,130	272,016	283,130
Other revenue	238,541	233,133	214,771	191,172	257,404	239,958	231,447	214,836	165,626	140,112
Total operating revenues	\$ 1,712,586	\$ 1,307,886	\$ 1,318,767	\$ 1,053,214	\$ 1,069,366	\$ 1,087,266	\$ 1,321,955	\$ 1,313,388	\$ 1,477,825	\$ 2,323,955
Operating expenses:										
Administration	\$ 687,571	\$ 496,812	\$ 388,524	\$ 398,610	\$ 338,200	\$ 385,056	\$ 345,206	\$ 344,974	\$ 352,179	\$ 1,149,318
Transfer station	1,419,777	909,581	808,104	798,313	754,792	694,271	894,903	875,498	859,182	1,458,446
Ivy Material Utilization Center	359,715	298,782	259,669	257,481	205,089	217,787	299,122	258,343	273,268	305,547
Ivy environmental ***	524,934	425,466	264,995	(13,152)	318,515	3,472,632	528,473	1,680,530	826,564	(155,371)
Recycling programs	431,398	455,216	312,052	296,725	239,660	244,506	250,385	253,873	290,298	400,034
Depreciation	120,830	58,566	51,789	54,885	66,639	98,568	154,968	148,071	175,814	199,117
Total operating expenses	\$ 3,544,225	\$ 2,644,423	\$ 2,085,133	\$ 1,792,862	\$ 1,922,895	\$ 5,112,820	\$ 2,473,057	\$ 3,561,289	\$ 2,777,305	\$ 3,357,091
Operating income (loss)	\$ (1,831,639)	\$ (1,336,537)	\$ (766,366)	\$ (739,648)	\$ (853,529)	\$ (4,025,554)	\$ (1,151,102)	\$ (2,247,901)	\$ (1,299,480)	\$ (1,033,136)
Nonoperating revenues (expenses):										
Interest earned	\$ 69,162	\$ 50,437	\$ 31,333	\$ 16,107	\$ 8,745	\$ 7,766	\$ 10,963	\$ 11,590	\$ 12,438	\$ 18,028
Local government contributions - remediation support	383,742	396,787	576,714	720,151	809,908	817,348	770,722	755,253	875,480	409,624
Local government contributions - operations support	1,078,539	747,161	368,856	542,926	398,040	135,286	517,344	203,978	192,372	905,087
Settlement income	-	-	-	-	-	-	-	10,997	-	900,000
Grant income	29,597	27,118	27,811	28,878	28,562	28,554	32,370	23,431	26,714	23,408
Other income	7,308	8,034	5,220	31,800	-	7,200	14,000	-	7,130	-
Gain (loss) on disposal of assets	(42,728)	5,846	-	(2,665)	-	(3,000)	-	-	1,527	2,081
Interest expense	-	-	-	-	-	-	-	-	(6,242)	(17,681)
Total nonoperating revenues (expenses)	\$ 1,525,620	\$ 1,235,383	\$ 1,009,934	\$ 1,337,197	\$ 1,245,255	\$ 993,154	\$ 1,345,399	\$ 1,005,249	\$ 1,109,419	\$ 2,240,547
Income before capital grants	\$ (306,019)	\$ (101,154)	\$ 243,568	\$ 597,549	\$ 391,726	\$ (3,032,400)	\$ 194,297	\$ (1,242,652)	\$ (190,061)	\$ 1,207,411
Capital grants	1,075,125	1,771,792	210,083	-	-	-	-	-	-	-
Change in net position	\$ 769,106	\$ 1,670,638	\$ 453,651	\$ 597,549	\$ 391,726	\$ (3,032,400)	\$ 194,297	\$ (1,242,652)	\$ (190,061)	\$ 1,207,411

*** Ivy Environmental expenses include landfill closure and post-closure costs.

Annual Tonnages of Selected Categories of Waste Received
Last Ten Fiscal Years

Years Ended June 30,	Municipal Solid Waste	White Goods	Tires	Clean Fill	Sludge	Grindable Vegetative Material
2010	42,163	153	154	5,760	1,091	2,756
2011	26,735	120	151	10,763	1,231	2,912
2012	21,448	87	158	6,648	878	1,877
2013	18,124	76	131	10,489	0	3,714
2014	6,864	73	92	9,087	0	2,016
2015	7,097	80	133	5,952	0	1,874
2016	7,761	107	169	5,889	0	1,560
2017	8,341	123	87	6,354	0	2,864
2018	8,423	119	58	4,819	0	2,199
2019	16,404	121	171	7,764	0	2,989

RIVANNA SOLID WASTE AUTHORITY
Table 4

Waste Tonnages Diverted for Reuse or Recycling
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Cardboard (corrugated)	807	763	812	459	278	279	358	359	482	482
Newspaper, magazines, catalogs	427	424	419	512	524	640	782	765	858	1,150
Mixed paper and phone books	265	186	156	214	212	265	214	258	228	412
File stock (office paper)	128	111	122	125	125	164	192	172	220	288
Glass ***	411	252	252	191	219	249	398	357	413	684
Metal cans	58	41	31	32	30	34	47	55	41	100
Plastic	127	103	86	82	95	98	69	82	81	160
White goods (scrap metal)	121	119	123	107	80	73	76	87	120	153
Vegetation	2,989	2,199	2,864	1,560	1,874	2,016	3,714	1,877	2,912	2,756
Pallets	73	77	72	55	79	71	81	88	89	114
Tires	171	58	87	169	133	92	131	158	151	154
	<u>5,577</u>	<u>4,333</u>	<u>5,024</u>	<u>3,506</u>	<u>3,649</u>	<u>3,981</u>	<u>6,062</u>	<u>4,258</u>	<u>5,595</u>	<u>6,453</u>

Note:

*** Glass includes glass crushed and reused on roads at Ivy MUC for FY 2012 and prior years.

Tipping Fees Per Ton By Waste Category
Last Ten Fiscal Years

Waste Category	Fiscal Years Ended June 30,									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Municipal:										
Ivy Transfer Station	\$ 52.00	\$ 66.00	\$ 66.00	\$ 66.00	\$ 66.00	\$ 66.00	\$ 66.00	\$ 66.00	\$ 66.00	66.00
BFI Transfer Station	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	62.00
Vegetative	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00
Tires:										
Whole Tires	190.00	190.00	190.00	190.00	190.00	190.00	190.00	190.00	190.00	173.10
White Goods:										
Non-Freon	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	104.30
Clean-Fill	10.00	10.00	10.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Sludge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.00	8.00	7.30
Pallets	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	46.00

RIVANNA SOLID WASTE AUTHORITY
Table 6

Top Ten Customers
Current Year and Nine Years Ago

Fiscal Year 2019 (Current Year):

	Operating Revenues	
	Amount	% of Total
Sonoco	121,839	7%
Cavalier Container, LLC	118,374	7%
Waste Management of VA, Inc.	114,678	7%
Black Bear Composting	78,365	5%
Gerdau Metals Recycling	62,483	4%
Albemarle County	49,429	3%
Time Disposal	43,827	3%
Rivanna Water & Sewer Authority	40,547	2%
Happy Little Dumpsters, LLC	36,980	2%
Oakhill Investments, LLC	22,824	1%
Subtotal (top ten customers)	\$ 689,346	40%
Other customers	1,023,240	60%
Total	\$ 1,712,586	100%

Fiscal Year 2010 (Nine Years Ago):

	Operating Revenues	
	Amount	% of Total
City of Charlottesville	\$ 401,807	17%
Waste Mgmt. of VA-Blue Ridge	257,814	11%
International Paper	219,981	9%
Albemarle County	79,967	3%
Dixon's Trash Disposal	71,633	3%
Cycle Systems, Inc.	68,927	3%
Rivanna Water & Sewer Authority	56,723	2%
McCauley's Disposal Service	46,519	2%
Barnett's Trash Service	39,941	2%
Efficient Roll-Off & Recycling	39,644	2%
Subtotal (top ten customers)	\$ 1,282,956	55%
Other customers	1,064,407	45%
Total	\$ 2,347,363	100%

RIVANNA SOLID WASTE AUTHORITY

Table 7

Outstanding Debt by Type
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Bank notes payable	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	206,827
Total outstanding debt	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	206,827
Debt per capita	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$ 1.47

Note: Debt per capita was calculated based on population figures for the calendar year ending within the fiscal year obtained from U.S. Department of Commerce - Bureau of Economic Analysis for the City of Charlottesville and County of Albemarle.

RIVANNA SOLID WASTE AUTHORITY**Table 8**

Demographic Data for the Service Area
City of Charlottesville & Albemarle County, Virginia
Last Ten Calendar Years

<u>Calendar Year</u>	<u>Population (2)</u>	<u>Personal Income (thousands of \$) (2)</u>	<u>Per Capita Personal Income (\$) (2)</u>	<u>Unemployment Rate (1)</u>
2009	141,125	6,825,990	48,368	5.8%
2010	142,703	7,209,179	50,519	6.5%
2011	144,094	7,623,402	52,906	5.9%
2012	146,077	8,402,062	57,518	5.5%
2013	147,430	8,270,217	56,096	5.0%
2014	149,410	8,881,388	59,443	4.6%
2015	151,694	9,494,461	62,590	3.9%
2016	153,705	9,981,222	64,938	3.6%
2017	155,721	10,531,351	67,630	3.3%
2018	not available	not available	not available	2.7%

(1) Virginia Employment Commission - Virginia Workforce Connection - for Charlottesville Metropolitan Service Area

(2) U.S. Department of Commerce - Bureau of Economic Analysis - for City of Charlottesville and Albemarle County

RIVANNA SOLID WASTE AUTHORITY

Table 9

Principal Employers in the Charlottesville Area
Current Year and Nine Years Ago

Employer	Fourth Quarter of 2018		Fourth Quarter of 2009	
	Number of Employees	Rank	Number of Employees	Rank
University of Virginia/ Blue Ridge Hospital	1,000 & over	1	1,000 & over	1
University of Virginia Medical Center	1,000 & over	2	1,000 & over	2
County of Albemarle	1,000 & over	3	1,000 & over	3
Sentara Health Care	1,000 & over	5		
Martha Jefferson Hospital			1,000 & over	4
UVA Health Services Foundation	1,000 & over	4	1,000 & over	7
City of Charlottesville	1,000 & over	6	1,000 & over	5
Charlottesville City School Board	500-999	7	500-999	8
State Farm Mutual Automobile Insurance	500-999	8	1,000 & over	6
U.S. Department of Defense	500-999	9		
Servicelink Management Com Inc	500-999	10		
Northrop Grumman Corporation			500-999	10
Aramark Campus LLC			500-999	9

Source: Virginia Employment Commission, Quarterly Census of Employment and Wages
- for Charlottesville Metropolitan Service Area (MSA)

Each employer's percentage of total employment is not available.

RIVANNA SOLID WASTE AUTHORITY
Table 10

Number of Positions by Activity
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Number of budgeted full-time equivalent positions:										
Operations Support Administrator	1.0									
Ivy Operations and Environmental	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Positions Allocated Between Transfer,										
Ivy Operations, and Recycling										
-Attendants	5.2	2.7	3.2	3.2	3.2	3.2	7.5	7.5	6.0	9.5
-CDL Drivers	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0
Recycling	1.8	1.8	0.0	0.0	0.0	0.0	0.0	0.0	2.1	3.1
Joint Administrative Staff	4.0	3.5	3.4	3.5	2.6	2.6	2.6	2.8	2.8	4.9
Total	18.9	14.0	12.6	12.7	11.8	11.8	16.1	16.3	15.9	22.5

Rivanna Water & Sewer Authority shares its administration staff with Rivanna Solid Waste Authority.
The number noted above is the number of full time employee equivalents allocated to Rivanna Solid Waste Authority.

Operating and Capital Indicators
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Waste facilities:										
Rivanna-owned MSW/CDD transfer stations:										
Number of owned MSW/CDD transfer stations	1	1	1	1	1	1	1	1	1	1
Ivy Material Utilization Center (IMUC)										
Total MSW/CDD tonnage received	16,404	8,423	8,341	7,761	7,097	6,864	18,124	21,448	26,735	30,311
Average daily tonnage received	61	33	33	31	28	27	59	69	87	98
Design capacity in tons per day (Note 1)	300	150	150	150	150	150	150	150	150	150
All other waste tonnage received (Ivy MUC)	11,118	7,272	9,499	7,780	8,117	11,340	14,491	10,094	15,670	10,723
Number of vehicles visiting IMUC	46,228	39,342	37,207	34,596	33,793	34,335	42,121	41,957	47,827	48,896
Number of transactions	88,080	74,828	71,827	67,258	64,818	65,944	80,037	78,531	92,399	50,887
Contracted MSW/CDD transfer stations:										
Number of contracted MSW/CDD transfer stations	0	0	0	0	0	0	0	0	0	1
Total MSW/CDD tonnage received	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11,852
Number of transactions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2,220
Average daily tonnage received	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	38
Design capacity (Note 2)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Recycling facilities:										
Number of recycling centers	2	2	2	2	2	2	2	2	2	2
Number of newspaper-only drop off sites	2	2	2	3	3	3	3	3	2	2
Tons of recyclable materials received	2,224	1,881	1,878	1,615	1,483	1,729	2,060	2,048	2,323	3,073

Note 1: Design capacity of the Ivy Material Utilization Center increased from 150 to 300 tons per day with the completion of the new facility in September 2019.

Note 2: Design capacity of the contracted MSW/CDD transfer station is not applicable, because it accepted waste from sources other than RSWA.

RIVANNA SOLID WASTE AUTHORITY

Table 12

Schedule of Insurance in Force
June 30, 2019

<u>Type Of Coverage/Company Name</u>	<u>Coverage Limits</u>	<u>Annual Premium</u>
<u>Commercial Property</u>		
Virginia Association of Counties 07/01/18-07/01/19	\$ 5,389,574 Property Value and Business Income/ Extra Expense	\$ 5,884
<u>Worker's Compensation</u>		
Virginia Municipal Group Self Insurance Association 07/01/18-07/01/19	\$ 1,000,000 Each Occurrence	\$ 42,158
<u>Comprehensive Automobile</u>		
Virginia Association of Counties 07/01/18-07/01/19	\$ 10,000,000 Comprehensive & Collision	\$ 4,484
<u>Crime Policy</u>		
Virginia Association of Counties 07/01/18-07/01/19	\$ 500,000	\$ 975
<u>General Liability</u>		
Virginia Association of Counties 07/01/18-07/01/19	\$ 10,000,000	\$ 3,402
<u>Public Officials Liability</u>		
Virginia Association of Counties 07/01/18-07/01/19	\$ 10,000,000	\$ 1,134



ROBINSON, FARMER, COX ASSOCIATES, PLLC

Certified Public Accountants

**Independent Auditors' Report on Internal Control over Financial Reporting and on
Compliance and Other Matters Based on an Audit of Financial Statements
Performed in Accordance with Government Auditing Standards**

**To the Board of Directors
Rivanna Solid Waste Authority
Charlottesville, Virginia**

We have audited, in accordance with the auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the *Specifications for Audits of Authorities, Boards, and Commissions*, issued by the Auditor of Public Accounts of the Commonwealth of Virginia, the financial statements of the business-type activities of Rivanna Solid Waste Authority as of and for the year ended June 30, 2019, and the related notes to the financial statements, which collectively comprise Rivanna Solid Waste Authority's basic financial statements and have issued our report thereon dated October 25, 2019.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered Rivanna Solid Waste Authority's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of Rivanna Solid Waste Authority's internal control. Accordingly, we do not express an opinion on the effectiveness of Rivanna Solid Waste Authority's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. *A material weakness* is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. *A significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether Rivanna Solid Waste Authority's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Robinson, Farmer, Cox Associates
(Charlottesville, Virginia
October 25, 2019



IMUC Forestry Management Plan

Presented to the Board of Directors by : Phil McKalips, RSWA Director of Solid Waste & David Powell, VA Department of Forestry

November 19, 2019





Rivanna Solid Waste Authority Authority Alb-95-050

David Powell
(434)977-5193
david.powell@dof.virginia.gov
6/10/2019

Ivy MUC Site Overview



Background

- The Ivy Material Utilization Center property is approximately 300 acres with an additional 30 acres of property along its western border (Booth Farm).
- The closed landfill cells and other industrial areas comprise about 120 acres in the center of the 300 acre property
- The remainder of the property is wooded, scrub, and grassland buffer between the active portions of the site and our neighbors.

What is the value of the Buffer?

- Provide a space for natural attenuation to reduce constituent levels before groundwater leaves the site.
- Provide a visual break between the closed and active portions of the site and our neighbors.
- Help maintain surface water quality in waterways through the site.
- Dampen the amount of noise that travels from the activities at the site and our neighboring properties.
- Provide habitat for a wide variety of wildlife (deer, turkey, coyote, foxes, and many birds).



Viewshed of Parcels A and C from Landfill



View of Pine Growth in need of thinning as well as invasive scrub growth at borders.



View of Open Areas being colonized by invasive species.

Access trail through hardwood stand, prone to colonization by invasive species.



Why do we need to do anything?

- Part of our buffer includes the remnants of a tree plantation that used to occupy most of the site. These trees are well past their typical harvest life and are now prone to sudden die-offs from infestations or other stressors.
- Open portions of the site are being taken over by invasive species (Autumn Olive, Multiflora Rose, Tree of Heaven) that require us to expend additional effort to maintain roads, paths, and open areas needed for operations.
- We want to maintain the buffer for our neighbors.

Forestry Management Plan Recommendations


- Harvest Parcel A, selective thinning of two other small parcels (E and F).
- Patch Clear-cut in Parcel C.
- Habitat Restoration in Parcel D and FF3.
- Plant Parcels A (after harvest), FF1, FF2, and Open Parcel into pine forest (for future harvest).
- Manage Parcel H (control invasive species).
- Maintain Riparian and SMZ Parcels.

First Phase to implement the Plan

- Communicate Plan with neighbors.
- Hire a Consulting Forester to procure a timber company, evaluate harvesting plans, and evaluate timber pricing.
- Bid for timber company and select best offer.
- Harvest timber from Parcels A, E, and F.
- Evaluate additional habitat restoration, management recommendations and opportunities.
- Plant harvested and new forest areas.
- We believe that this Phase would be revenue neutral or positive.



Options

- Take no action. Let the buffer areas manage themselves.
 - Approve the First Phase of Plan implementation.
 - Consider moving forward, at this time, with additional Forestry Plan Recommendations.
- 

Staff Recommendation

- Authorize the Executive Director to proceed with procurement of a Consulting Forester and implementation of the first Phase of the Management Plan.

Questions?

Rob Farrell
State Forester



COMMONWEALTH of VIRGINIA

Department of Forestry

900 Natural Resources Drive, Suite 800 □ Charlottesville, Virginia 22903
(434) 977-6555 □ Fax: (434) 296-2369 □ www.dof.virginia.gov

August 20, 2019

Tract Number: Alb-95-050

Rivanna Solid Waste Authority
C/O Phillip McKalips
695 Moores Creek Ln
Charlottesville, VA 22902

Dear Mr. McKalips:

Please find within the *Virginia Forest Stewardship Plan* for the Ivy Materials Utilization Center located in Albemarle County. It was my pleasure to prepare this plan for the Authority knowing that you and the Board have a true interest in the good stewardship and active management of your natural resources.

In this plan, there are two basic components. The first is updated management recommendations based upon the Authority's objectives for managing the property. The second part is an extensive appendix containing important information to help readers understand the plan's recommendations and make future management decisions. All of the recommendations within this plan are for consideration, but I believe that they will help achieve the long- and short-term goals for the forested portions of the property.

The first step you should take in managing your forest resources is to clear-cut and reestablish a loblolly pine plantation in Parcel A.

Please feel free to contact me if you have any questions or need additional information.

Sincerely,

David Powell, CF
Senior Area Forester
900 Natural Resources Dr. Ste. 800
Charlottesville, VA 22903
434-220-9179
David.powell@dof.virginia.gov

VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

Location: 4576 Dick Woods Rd

This Forest Stewardship Plan guides the active management of the natural resources on the property. The plan builds upon the objectives defined as being important to the RSWA. All of the management recommendations are for consideration.

The stand data table figures in this plan are for planning purposes ONLY and not intended for making economic decisions where more detailed information would be required.

THE PRIMARY GOALS FOR MANAGING THE PROPERTY ARE:

1. Maintaining healthy forest buffers around the material utilization center
2. Forest stand management
3. Wildlife habitat
4. Non-wildlife related outdoor recreation
5. Managing timber for income

INTRODUCTION:

This multiple-use forest management plan covers the examination of approximately 184 acres of forestland in Albemarle County, Virginia. The management recommendations, given on the following pages, parcel specific. Boundaries and acres are only estimates derived from aerial photographs. The tract map is located in the plastic folder at the front of this book, allowing you to see the map as you read the plan.

By having this plan developed, the property is now eligible to become a certified Tree Farm through the American Forest Foundation's Tree Farm System. It also qualifies as a Natural Resource and Conservation Service Conservation Activity Plan #106. Contact your local DOF Forester to learn more about the benefits of these two programs.

PROPERTY OVERVIEW:

The property sits on the north side of Dick Woods Rd; bordered by I-64 to the north and an unnamed tributary of Broad Axe Creek to the west. The eastern boundary is private land. Broad Axe Creek traverses the property. The majority of the property is comprised of closed and monitored landfill cells. The property currently supports a material utilization center. The surrounding property, most of which is wooded, is primarily used as aesthetic and noise abatement buffers.

VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

Rivanna Solid Waste Authority

Alb-95-050

DESCRIPTIONS AND RECOMMENDATIONS: (CLEAR CUT AND REPLANT LOBLOLLY PINE)

PARCEL A

Acres:	41
Forest Type:	Loblolly pine plantation
Species Present:	Loblolly pine Virginia pine, scattered mixed hardwoods
Age	38 years
Stand History:	The current stand was planted in 1980 after the previous pine stand was harvested.
Size:	Pulpwood-sawtimber
Tree Quality:	Good
Stocking/Density:	Overstocked
Growth Rate & Vigor:	Slow and trees have reduced vigor.
Site Quality & Soils:	Chester Loam and Hayesville Loam. These soils are well suited to producing quality forests. However, they tend to be erosive, so precautions are needed while undertaking management activities to prevent erosion. Additional soils information can be found in Appendix B.
Aspect & Topography	Gently rolling
Water Resources	Broad Axe Creek comprises the southern and western stand border
Invasive Species:	Autumn olive, Japanese stilt grass, Tree of Heaven
Wildlife Habitat:	The portions of the stand bordering the creek form excellent wildlife travel corridors. The tight shaded upland portions of the stand provide escape cover for a variety of wildlife species.
Recreation/Aesthetics:	The existing logging road/ monitoring well road system allow easy accessibility to most of the stand.
Cultural Resources:	None noted during inspection, but older topographic maps indicate a homestead near the center of the stand.
T&E Species Present:	None noted. However, the James Spiny mussel has been documented downstream in the Mechums River. In addition, the Virginia Game and Inland Fisheries Department predicts that Broad Axe Creek is also suitable habitat.
Fire Risk:	Moderate. The stand has a flammable forest floor, but the chances of ignition are low due to the lack of improved infrastructure and human accessibility to the stand.
Unique Natural Features:	None Noted.

VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

Rivanna Solid Waste Authority

Alb-95-050

Recommendations:

This pine stand has grown in overstocked conditions for at least 15 years; therefore, most trees have small live crown ratios (about 25% on average) resulting in reduced vigor and growth of the loblolly pine. In general, the hardwood component along Broad Axe Creek are healthy and still growing well.

During my recent inspection of the stand, I noticed accelerated pine mortality. This mortality will continue and will increase over time. Stands such as this are also susceptible to pine beetle infestations. Fortunately, I did not encounter any active pine beetle infestations during my inspection of the stand.

I recommend that this stand be clear-cut harvested and then replanted with loblolly pine. This will allow the Authority to replace the current declining stand with a young and vigorous stand. Aesthetically, there would be little impact from such an operation from surrounding properties. Additionally, young vigorously growing stand tend to sequester more carbon than slow growing stands.

Timber sales require a high degree of planning; therefore, I highly recommend that you hire a consulting forester to appraise the timber and assist you with the entire timber marketing transaction. Consulting foresters are analogous in many ways to a Realtor. A consultant will ensure that you receive market value for your timber, outline the environmental laws, and create a strong legal contract that protects landowner interests. The contract should state the exact work to be performed, as well as who will do it and when it will be completed. Several consultants who come to mind would be Matt Dowdy (Dowdy Forest & Land Management), Paul Haney (Environmental Timber Management LLC), Billy Newman (EnviroFor, LLC), Glen Worrell (F & W Forestry) & Bob Warring (Warring Forestry Mgt LLC). A more comprehensive online list is available at the following link: <http://www.dof.virginia.gov/services/consultant-forester.htm> . (Search the Northern Piedmont area.)

Additionally, I would recommend that the harvest utilize a tree length logger with a chipper to maximize the utilization of the woody biomass in the parcel. Several important issues need addressing prior to harvesting timber. Several existing roads lead to the parcel. One of those roads will need improvements to allow tractor-trailer length trucks to access the stand. The second issue is designing and building an appropriate crossing across Broad Axe Creek to allow the log trucks access to the stand without negatively affecting the creek. Additional information detailing the harvesting method, access points, required Best Management Practices, and other pertinent information is contained in an accompanying Pre-Harvest Plan which will be developed prior to selling the timber.

After the harvesting, all needed Best Management Practices need installation. The parcel then should be chemically site prepared and planted with genetically improved loblolly pine or as an alternative shortleaf pine.

VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

Rivanna Solid Waste Authority

Alb-95-050

DESCRIPTIONS AND RECOMMENDATIONS: *(LEAVE TO GROW)*

PARCEL B

Acres:	44
Forest Type:	Mixed hardwood
Species Present:	American beech, hickory, red maple, sycamore, red oak, white oak, yellow poplar, scattered Virginia pine
Age	Variable
Stand History:	Natural hardwood forest that has seen periodic disturbances during past operations at the facility.
Size:	Pulpwood-sawtimber
Tree Quality:	Poor-Good
Stocking/Density:	Generally well stocked
Growth Rate & Vigor:	Variable, but generally good
Site Quality & Soils:	Hayesville Loam. Hayesville is a gently sloping to moderately sloping, very deep, well-drained soil. Typically, the surface layer is loam about 7 inches thick. The surface layer has a moderate content of organic matter. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is not flooded, is not ponded and not hydric. The seasonal high water table is at a depth of more than 6 feet. The land capability classification is 2e.
Aspect & Topography	Generally moderately sloping towards Broad Axe Creek.
Water Resources	Broad Axe Creek
Invasive Species:	Autumn olive, Japanese stilt grass, Kudzu, Oriental Bittersweet, Tree of Heaven,
Wildlife Habitat:	This stand provides both hard and soft mast utilized by wildlife such as white tailed deer, black bear, wild turkey, ruffed grouse, squirrel and a variety of migratory songbirds.
Recreation/Aesthetics:	Portions of this stand have a dense understory of laurel and/or autumn olive, making traversing the stand difficult.
Cultural Resources:	None noted
T&E Species Present:	Same as Parcel A
Fire Risk:	Low
Unique Natural Features:	Rock bluffs above Broad Axe Creek

VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

Rivanna Solid Waste Authority

Alb-95-050

Recommendations:

Leave to grow. Hardwood TSI to remove invasive species and thin out heavy laurel understory. The main purpose of an improvement cut is to enhance the quality of the residual forest; i.e., the focus is on the trees you leave rather than the trees you take. By removing poorly formed or undesirable trees, you will direct “wasted” sunlight and nutrients to better growing stock, which in turn, will produce better timber in the future and better “mast” (acorns, etc.) for wildlife in the interim.

Logs and snags (dead standing trees) are important for cavity nesting birds (over 60 species in Virginia) and for grubs and insects, which are prey for animals from woodpeckers to black bears. Leave some trees cut during the thinning operation lying on the forest floor as habitat for insects, small mammals, reptiles, and amphibians. Leave or create 2-5 snags or living cavity trees per acre. If you do not have enough cavity trees present, you can girdle a poorly formed tree and let it die. Note that you can leave such a snag standing next to a crop tree with minimal reduction in the growth of the living tree.

VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

Rivanna Solid Waste Authority

Alb-95-050

DESCRIPTIONS AND RECOMMENDATIONS: *(LEAVE TO GROW)*

PARCEL B-1

Acres:	4
Forest Type:	Cove hardwood
Species Present:	Yellow poplar, American beech, hickory, red maple, and sycamore
Age	Variable
Stand History:	Natural hardwood forest that has regenerated after previous agricultural activities ceased.
Size:	Pulpwood-sawtimber
Tree Quality:	Good
Stocking/Density:	Generally well stocked
Growth Rate & Vigor:	Generally good
Site Quality & Soils:	Ashe loam and small pocket of Chester Loam. These soils can produce excellent forest stands, but they tend to have low load bearing strength so additional planning is needed for sighting log roads, decks, etc.
Aspect & Topography	Generally flat floodplain along Broad Axe Creek.
Water Resources	Broad Axe Creek
Invasive Species:	Autumn olive, Japanese stilt grass, Kudzu, Oriental Bittersweet, and Tree of Heaven
Wildlife Habitat:	This stand provides soft mast utilized by wildlife such as white tailed deer, black bear, wild turkey, ruffed grouse, squirrel and a variety of migratory songbirds. It also serves as a wildlife corridor to allow wildlife to move up and down the creek.
Recreation/Aesthetics:	This stand is isolated between the creek and the interstate, making access difficult.
Cultural Resources:	None noted
T&E Species Present:	Same as Parcel A
Fire Risk:	Low
Unique Natural Features:	None noted
Recommendations:	Leave to grow.

VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

Rivanna Solid Waste Authority

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DESCRIPTIONS AND RECOMMENDATIONS: (*LEAVE TO GROW*)

PARCEL C

Acres:	21
Forest Type:	Mixed upland hardwood
Species Present:	White oak, northern red oak, chestnut oak, black oak, scarlet oak, yellow poplar and hickory, white pine.
Age:	60+ years of age.
Stand History:	This stand has grown and developed with limited intervention
Size:	Sawtimber
Tree Quality:	Good
Stocking/Density:	Well stocked
Growth Rate & Vigor:	Good
Site Quality & Soils:	Ashe loam and Chester Loam.
Aspect & Topography	Moderately rolling from the rocky hilltops towards the drainages
Water Resources	Streams border the northern and western borders of the stand.
Invasive Species:	Autumn olive
Wildlife Habitat:	This stand provides both hard and soft mast utilized by wildlife such as white tailed deer, black bear, wild turkey, ruffed grouse, squirrel and a variety of migratory songbirds.
Recreation/Aesthetics:	This stand is easy to traverse, especially during periods of leaf off.
Cultural Resources:	On top of the western hilltop, some grading has been done at some point in the past. Perhaps it was investigative for potential house sites.
T&E Species Present:	Same as parcel A
Fire Risk:	Moderate as the southern boundary is Dick Woods Rd. During the spring and fall, fire starts along the road have the opportunity to burn through the stand. However, the likelihood of fire damage in the stand is generally low.

Unique Natural Features: The twin rock hilltops separated by a saddle within the stand.

Recommendations:

While this stand has suffered some moderate storm damage in the past, the stand is healthy and still developing. Stand quality is good and it does contain commercially valuable timber; so the opportunity to conduct a shelterwood or patch clear-cut

VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

Rivanna Solid Waste Authority

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silvicultural harvest currently exists. However, I would recommend waiting until after Parcel A has been harvested and reforested. This recommendation could change if a forest health problem develops in the interim.

Patch clear-cutting involves creating several 0.5 –1 acre clear cuts throughout the interior of the stand would add habitat diversity for wildlife, encourage oak regeneration, provide more of an incentive for timber buyers, and need not be visible from the stand boundaries. Some foresters refer to this type of harvest as a group selection cut. A few patch cuts well dispersed and irregularly or “naturally-shaped” will be more valuable for wildlife than one large clear-cut. Although ruffed grouse and other game species require young forest stands, other native species that have adapted to natural disturbances (e.g., ice storms, fires, winds, diseases) would also benefit from patch cuts in the landscape. Golden-winged and prairie warblers, rufous-sided towhees, yellow-breasted chats, and indigo buntings are just a few of the declining songbird species that need shrubs or saplings characteristic of regenerating clear-cuts. I suggest three criteria for locating the cuts: (1) a relatively dense stand of mature trees for financial reasons, (2) abundant oak regeneration on the forest floor so that this existing oak regeneration captures the sunlight, and (3) maximum separation from the other 2-3 cuts to give wildlife easy access to early vegetative growth throughout the stand. Like stand A, it is recommended to retain a professional consulting forester to assist with the development and implementation of such practices.

VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

Rivanna Solid Waste Authority

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DESCRIPTIONS AND RECOMMENDATIONS: (MANAGE AS VISUAL BUFFER)

PARCEL D

Acres:	6
Forest Type:	Pine and hardwood
Species Present:	Loblolly pine, cool season grasses, yellow poplar, and assorted mixed hardwood
Age & Stand History:	Approximately 20. The loblolly pine portions of this stand were planted to help create a visual buffer along Dick Woods Road.
Size:	Pulpwood
Tree Quality:	Good
Stocking/Density:	Understocked as a forest stand
Growth Rate & Vigor:	Good
Site Quality & Soils:	Hayesville clay loam. This soil tends to be erosive and suited for good forest growth.
Aspect & Topography	Gently sloping towards Dick Woods Road
Water Resources	A stream borders the stand to the east.
Invasive Species:	Tree of Heaven, Autumn Olive, oriental bittersweet.
Wildlife Habitat:	This area provides some cover for ground animals and migratory songbirds.
Recreation/Aesthetics:	Provides aesthetic buffer of the facility from Dick Woods road
Cultural Resources:	None noted
T&E Species Present:	None noted
Fire Risk:	Moderate as the southern boundary is Dick Woods Rd. During the spring and fall, fire starts along the road have the opportunity to burn through the stand. However, the likelihood of fire damage in the stand is generally low.
Unique Natural Features:	None

Recommendations:

Making several small ongoing management changes could dramatically enhance this parcel. One option would be to replace the standard mowing regime in the grassy segments with more of a native meadow vegetation structure. Such a meadow will be attractive to people, butterflies, birds, and other animals. Warm season grasses are especially valuable as nesting cover for quail and other songbirds. Following fescue eradication, disk and cultipack a smooth seedbed next spring. Using a warm season grass drill, plant a mixture of 2 lbs. big bluestem, 2 lbs. of Indian grass, and 1 lb. of switch grass per acre during May-June. If you plan to hay the field, increase the rates to 3 lbs., 3 lbs., and 1 lb., respectively and never mow below a 10" stubble height. Make sure that

VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

Rivanna Solid Waste Authority

Alb-95-050

you are applying these rates in “pure live seed” or “PLS,” as chaff and other materials often occupy a substantial portion of the weight. The seed bag or supplier should be able to tell you the ratio of PLS per bulk weight. You can also add some wildflowers to the grass mixture. Consider adding a total of 2 lbs./acre of seeds, choosing a mixture of 3-4 species from the following: Perennial Black Eyed Susan, Purple Coneflower, Lanceleaf Coreopsis, Ox Eye Sunflower, Butterfly Milkweed, Perennial Blanket Flower (Gailardia), and Roundhead Bush clover (actually a lespedeza - not showy but has a good seed head for birds and adds another type of plant).

Periodic burning is the best way to maintain warm season grass and wildflower meadows. The best time to burn meadows and fallow fields will be in late January or early February (remember that the burn law prohibits burning before 4 PM during February 15-April 30, unless an exemption is obtained).

In addition, installing bird and bat boxes can enhance the benefits of the stand to wildlife.

Install bird boxes - Blue birds and other birds could probably fair well with the flush of insects that thrive in and around the property. Consider putting up some blue bird boxes every 100 yards around the perimeter of your fields. Purple martins are another insect-eating species that you may enjoy. Martin houses should be placed on a pole far from any trees or other perches, and studies have shown higher nesting success rates when boxes are places with 150 yards of houses. Cleaning dates are crucial, so please consult www.purplemartin.org for more information if you are interested in putting up a martin house.

Install bat boxes - The parcel presumably provides a host of insect prey for bats, and could be enhanced with roosting sites. Bats often roost in caves, eaves of houses or barns, or under the shedding bark of large trees. To make up for the lack of such sites on your property, you could install at least one bat house near the clearing. For ideas and specifications, please consult www.batconservation.org/content/bathouse.

If you do decide to install bat boxes, there are certain factors that should increase the likelihood that bats will use them:

- (1) Boxes should be bigger (2'x2' minimum) as opposed to ones the size of a birdhouse (NOTE: this does contradict the dimensions in the guide, but not the style).
- (2) They need a warm southern exposure with direct sun.
- (3) With this in mind, the boxes need vents to allow for variable temperatures in the boxes. This way the bats can move within the boxes to an area with the desired temperature.
- (4) Create several baffles in the boxes. They need to be narrow (about 3/4"). The baffles also need scoring with horizontal cuts to give the bats something to hang onto.
- (5) Lastly, the box needs to be placed high (2nd story or 15-20' from the ground). Do not place a box in a tree that will leaf out and shade the box.

VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

Rivanna Solid Waste Authority

Alb-95-050

DESCRIPTIONS AND RECOMMENDATIONS: (CONDUCT PINE THINNING)

PARCEL E

Acres:	1
Forest Type:	Pine and hardwood
Species Present:	Primarily loblolly pine
Age:	Approximately 20
Stand History:	The loblolly pine portions of this stand were planted to reduce erosion in areas around the capped landfill.
Size:	Pulpwood
Tree Quality:	Good
Stocking/Density:	Overstocked
Growth Rate & Vigor:	Good, but beginning to decline with crown closure
Site Quality & Soils:	Hayesville loam
Aspect & Topography	Moderately steep
Water Resources	None noted
Invasive Species:	Tree of Heaven, autumn olive
Wildlife Habitat:	Mainly escape cover
Recreation/Aesthetics:	Not applicable
Cultural Resources:	None noted
T&E Species Present:	None noted
Fire Risk:	Low
Unique Natural Features:	None

Recommendations:

Commercially thin the stand to approximately 150 stems to the acre. This allows the remaining trees room to prosper. During or after this operation, control invasive species. Combining this activity with the clear cut of Parcel A would make sense. Thinning the pines will be one of the most important steps you can take to improve your property for wildlife, forest productivity, forest health, and even aesthetics. Thinning the stand will increase sunlight reaching the forest floor, enhancing the production of herbaceous vegetation important to wildlife and permitting the hardwood understory to flourish. Following thinning, you will have several options: a) maintain herbaceous ground cover, b) step away and allow oaks and other hardwoods to regenerate naturally, or b) a combination of a) and b).

VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

Rivanna Solid Waste Authority

Alb-95-050

DESCRIPTIONS AND RECOMMENDATIONS: (CONDUCT PINE THINNING)

PARCEL F

Acres:	1
Forest Type:	Pine and hardwood
Species Present:	Primarily loblolly pine
Age:	Approximately 20.
Stand History:	The loblolly pine portions of this stand were planted to moderate erosion in areas around the capped landfill.
Size:	Pulpwood
Tree Quality:	Good
Stocking/Density:	Overstocked
Growth Rate & Vigor:	Good, but beginning to decline with crown closure
Site Quality & Soils:	Hayesville loam
Aspect & Topography	Moderately steep
Water Resources	None noted
Invasive Species:	Tree of Heaven, autumn olive
Wildlife Habitat:	Mainly escape cover
Recreation/Aesthetics:	Not applicable
Cultural Resources:	None noted
T&E Species Present:	None noted
Fire Risk:	Low
Unique Natural Features:	None

Recommendations:

Commercially thin the stand to allow the remaining trees room to grow. Control, invasive species after thinning is completed. It would make sense to combine this activity with the clear cut of Parcel A. Thinning these pines will be one of the most important steps you can take to improve your property for wildlife, forest productivity, forest health, and even aesthetics. Thinning the stand will increase sunlight reaching the forest floor, enhancing the production of herbaceous vegetation important to wildlife and permitting the hardwood understory to flourish. Following thinning, you will have several options: a) maintain herbaceous ground cover, b) step away and allow oaks and other hardwoods to regenerate naturally, or b) a combination of a) and b).

VIRGINIA FOREST STEWARDSHIP MANAGEMENT PLAN

Rivanna Solid Waste Authority

Alb-95-050

Descriptions and Recommendations: *(Leave to Grow)*

PARCEL G

Acres:	17
Forest Type:	Mixed hardwood
Species Present:	Yellow poplar, red maple, Virginia pine, red oak, white oak, Tree of Heaven
Age:	Variable, the unharvested overstory is 60+ years of age.
Stand History:	The regeneration is approximately 20 years of age. It appears that much of the existing pine died and may have been salvage harvested (?). The resulting stand naturally regenerated.
Size:	Pulpwood-sawtimber
Tree Quality:	Fair to good
Stocking/Density:	Good
Growth Rate & Vigor:	Good (depending on species). The remaining remnant pines are growing extremely slowly, the hardwoods are growing at a moderate to good pace.
Site Quality & Soils:	Hayesville loam and Hayesville clay loam
Aspect & Topography	Gently rolling
Water Resources	There is a manmade pond north of the stand
Invasive Species:	Autumn olive, Tree of Heaven, privet, oriental bittersweet
Wildlife Habitat:	This stand provides both hard and soft mast utilized by wildlife such as white tailed deer, black bear, wild turkey, ruffed grouse, squirrel and a variety of migratory songbirds.
Recreation/Aesthetics:	The western portion of the stand is relatively open and easy to traverse. The eastern portion east of the old road cut has a heavy understory of invasive species and vines. During my examination, I found traces of an old bicycle or motorcycle path in the western portion of the stand.
Cultural Resources:	None noted
T&E Species Present:	None noted
Fire Risk:	Low
Unique Natural Features:	None
Recommendations:	Leave to grow. Control invasive species.

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DESCRIPTIONS AND RECOMMENDATIONS: (CONVERT TO FORESTED STANDS)

PARCEL FALLOW FIELDS (FF)

Acres:	19
Forest Type:	Mainly grasses with scattered trees
Species Present:	Fescue, yellow poplar, sycamore, tree of heaven, autumn olive
Age:	N/A.
Stand History:	These areas were cleared as part of the ongoing landfill operation.
Size:	Sapling
Tree Quality:	Poor
Stocking/Density:	Understocked
Growth Rate & Vigor:	Poor
Site Quality & Soils:	Ashe loam, Hayesville loam and Meadowville loam. These soils are well suited to producing quality forests. However, they tend to be erosive, so precautions are needed while undertaking management activities to prevent erosion.
Aspect & Topography	Generally flat to gently sloping
Water Resources	Fallow Field 3 has a manmade pond on the eastern boundary
Invasive Species:	Tree of heaven, autumn olive, oriental bittersweet, wild rose
Wildlife Habitat:	Early successional habitat
Recreation/Aesthetics:	Fallow field 3 has the potential for access to the pond.
Cultural Resources:	None noted
T&E Species Present:	None noted
Fire Risk:	High, but the risk of ignition is very low.
Unique Natural Features:	None
Recommendations:	

Fallow Fields 1 and 2 should be converted to forested cover. Converting to loblolly pine would be the most cost effective solution.

Fallow Field 3 has the opportunity to create an early successional buffer will provide habitat for nesting ducks and other wildlife, reduce runoff into the lake from adjacent yards, minimize erosion of the banks, and present more of a barrier to nuisance geese (which prefer unimpeded access to open water). Within 30-50 feet of the pond, plant low growing (< 10' tall) shrubs such as silky or gray dogwood, hazel alder, inkberry, arrowwood, virginia sweetspire, sweet pepperbush and spice bush. Common buttonbush grows well on the water's edge, along with the dogwoods, but

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reaches heights in excess of 15.' Beyond this buffer, Native warm season grasses (e.g., broom sedge, switch grass, indian grass, bluestem, coastal panic grass) can grow to 6' and make excellent sediment traps and bird nesting areas. In natural buffer areas where alders and other taller shrubs are apt to develop, these can be occasionally trimmed – even to ground level - during the winter or early spring while the sap is down. You can also bush hog these areas every 3-4 years during February 15 – March 30. As long as woody vegetation is clipped clean during dormancy, it will sprout, often more profusely than the original stems. Without periodic maintenance mowing or trimming, your buffer areas will outgrow their utility to certain species of wildlife and vegetation will limit residents' views.

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DESCRIPTIONS AND RECOMMENDATIONS: (CONVERT TO FORESTED STANDS)

PARCEL OPEN

Acres:	11
Forest Type:	Hay field
Species Present:	Fescue, tree of heaven, autumn olive, oriental bittersweet
Age:	N/A.
Stand History:	Hay field.
Size:	N/A
Tree Quality:	N/A
Stocking/Density:	N/A
Growth Rate & Vigor:	N/A
Site Quality & Soils:	Hayesville loam
Aspect & Topography:	Generally flat to gently sloping
Water Resources:	This field is bounded to the north by Broad Axe Creek
Invasive Species:	Tree of heaven, autumn olive, oriental bittersweet, wild rose
Wildlife Habitat:	Early successional habitat
Recreation/Aesthetics:	N/A.
Cultural Resources:	Agricultural bar. To the southeast of the barn, a large Chinese chestnut tree was noted. Vinca spp. was growing beneath the tree. This potentially indicates an old house site, cemetery or other cultural resource.
T&E Species Present:	None noted
Fire Risk:	High, but the risk of ignition is very low.
Unique Natural Features:	None
Recommendations:	

Convert to forested cover. Converting to loblolly pine would be the most cost effective solution. The first step would be to control the invasive species and current fescue cover utilizing a combination of herbicides and mechanical site preparation. Then approximately 500 loblolly pine or shortleaf pine should be planted per acre.

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Descriptions and Recommendations: *(Convert to desirable native species)*

PARCEL H

Acres:	5
Forest Type:	Mixed pine and hardwood
Species Present:	Yellow poplar, red maple, Virginia pine, red oak, white oak, Tree of Heaven
Age:	Variable.
Stand History:	These areas appear to have been parts of the hay field that are no longer maintained and have overgrown with the present woody cover.
Size:	Pulpwood
Tree Quality:	Poor
Stocking/Density:	Poor
Growth Rate & Vigor:	Poor.
Site Quality & Soils:	Ashe loam and Chester loam
Aspect & Topography	Gently rolling
Water Resources	None noted
Invasive Species:	Autumn olive, Tree of Heaven, privet, oriental bittersweet
Wildlife Habitat:	These areas primarily provide cover.
Recreation/Aesthetics:	These areas are very dense and difficult to traverse.
Cultural Resources:	None noted
T&E Species Present:	None noted
Fire Risk:	Low
Unique Natural Features:	None

Recommendations:

Control invasive species. Create soft edge- establish a shrub border around your fields. A soft edge, or tapered transition, between the field and woods provides better cover and opportunity for berry/seed production than does a sharp or "hard edge." You have three choices for developing good soft or stair-stepped edges: allowing natural vegetation to grow, cutting back trees, or planting shrubs.

The first method: control the invasive species and allow native plants to regenerate. This transition zone will develop naturally. These areas are important food and cover sites for a diversity of species, and they will need maintaining to prevent them from progressing to young forests. Periodic bush hogging of the smaller stems and manual topping of the larger stems during February - March will probably be the best option. If tree growth occurs, spot spraying their foliage with an appropriate herbicide during June or July will

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help. To keep the borders in diverse stages useful to wildlife, cut only about 1/3 of the total edge around the field in any given year; i.e., use a 3-year rotation. These margins should be cut when stems are almost too large for your bush hog to handle (perhaps every 4-5 years). A field border should maintain the feathered or tapered look, with taller shrubs nearest the wood line left to grow. Let fruit and nut producers such as dogwoods, persimmons, black gums, some oaks, etc. grow, eventually forming a ragged edge. Create "living brush piles" by hinge cutting undesirable trees like maples and sweetgums and felling them along the edge of the field. Make a hinge cut about 3-5 feet off the ground and just far enough into the trunk to make the tree fall. The fallen tree will remain alive for several years and will become a trellis for greenbrier and other desirable vegetation.

A more intensive route to achieving a soft edge is planting shrubs. In February-April, plant crabapple seedlings 8' apart and 8' from the tree line. Plant silky dogwoods 8' apart and 8' further toward the field. Use grow-tubes on your trees when they are small to prevent deer, rabbits, and voles from nibbling the bark. Mow between the crabapples and dogwoods when the seedlings are small to enhance their chances of surviving competition from weeds and natural tree sprouts. Depending on the width of your smallest bush hog, you may want to increase spacing of these seedlings to allow 1' clearance on each side of your mower platform. Plant a combination within 3 rows of bristly locust, partridge pea, or wild senna in a 3' X 3' spacing on the field side of your edge. You can mow down these shrubs every 3-5 years. With this combination of species, you stand a better chance of suiting the needs of multiple species on one site. Please do not feel limited to these suggestions.

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DESCRIPTIONS AND RECOMMENDATIONS: *(MANAGE FOR WETLAND AND RIPARIAN HABITAT)*

Parcel Riparian & SMZ

Acres:	20
Forest Type:	Mixed hardwood
Species Present:	Sycamore, red maple, green ash, yellow poplar, American beech, black locust, scattered red, white oak, and pine
Age:	Variable, overstory 60+ years
Size:	Pulpwood – saw timber
Quality:	Fair
Trees/acre:	Variably stocked, some areas are overstocked and others are under stocked
Growth Rate:	Variable
Soil/Water:	Mainly Meadowville loam, with pockets of Hayesville clay loam, Chester loam and Chewacla silt loam. These soils well suited to producing quality forests. However, they tend to be weak and poorly drained, so precautions need to be taken while undertaking management activities to prevent erosion.
Topography:	Generally gently sloping towards the stream
Wildlife Habitat:	Riparian areas are prime corridors to facilitate wildlife movement to and from the differing cover types that surround the farm. The tree cover also provides shade and organic matter for the stream, helping to maintain water quality.
Recreation/Aesthetics:	The trees provide aesthetic value to the property, especially if a future recreational trail plan is developed.
Fire Risk:	These areas have a low fire risk. Fire can start on the forest floor during droughty times, but the potential for severe damage to the standing timber is very low. Another factor reducing the fire risk is these areas contain flowing waters, which can serve as natural fire breaks for the property.
Unique Natural Features:	None noted
History:	According to aerial photographs, these areas were actively farmed in 1957. At some point after 1957, farming ceased and the resulting forested stands naturally regenerated.

Recommendations:

I recommend retaining and preserving these areas to protect both the water quality and aesthetic value to the property. Inspect the area for signs of insect, disease and weather damage. Where allowed by law, utilize the riparian buffer tax credit when realizing income in adjacent stands. Limit any future timber harvesting or understory removal in these areas so that no more than 50% of the crown cover is removed at any

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one time. Minimize heavy equipment use in this area. It should be monitored for forest health issues such as the Emerald Ash Borer. Additional information about the Emerald Ash Borer can be found in Appendix C. If an issue is detected, contact the Department of Forestry for recommendations to mitigate the issue.

GENERAL RECOMMENDATIONS

Many of the forested stands contain existing roads which access monitoring wells installed to monitor the health of the landfill. It will be critical to adequately mark and protect these wells while prevent damage during forest management activities.

Periodic inspection for forest health issues is suggested. If tree mortality is noted, please contact the Department so that mitigation options can be discussed. Otherwise, this forest management plan should be updated after 10 years.

COST-SHARE ASSISTANCE PROGRAMS

Cost-share assistance programs may be available to help defray reforestation project costs. Programs may pay between 35-75% of the costs involved in certain projects. Funds are available on a first-come, first-served basis and must be approved prior to the start of any management work. Please check with your local Department of Forestry representative for availability of funds.

CULTURAL AND HISTORIC RESOURCES

Cultural resources refer to landscapes, structures, archeological artifacts, and vegetation that represent a culture or society of historic value. Federal and state laws protect some archeological, cultural, and historic sites from disturbances, destruction, or removal. It is critical to understand where such sites may be located prior to ground-disturbing forest management activities.

Historic and cultural resources are a vital link to past land-use practices in Virginia. The Department of Historic Resources offers programs which survey, catalog, and encourage the preservation of historic resources. This Department maintains records of historic sites, and these records are available to the general public. More information can be found at www.dhr.virginia.gov or by calling their office at (804) 367-2323.

THREATENED OR ENDANGERED SPECIES

No endangered or protected species were observed on the property. [Information in this plan concerning the presence of Threatened and Endangered \(T&E\) species has been determined through observation and/or review of T&E species maps.](#) This information does not substitute for a through exam completed by trained T&E specialists. For more information regarding threatened and endangered species, or any regulations involved with them please contact your local Virginia Department of Game and Inland Fisheries office or the Department of Conservation and Recreation, Natural Heritage office.

FOREST HEALTH AND PROTECTION

A healthy forest is a forest that possesses the ability to sustain the unique species composition and processes that exist within it. Active management of the forest helps to

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maintain and improve its productive capacity, taking into account all the factors that influence the resource elements addressed in the Forest Stewardship Plan. Silviculture harvest practices and the use of prescribed fire as a tool can reduce risk from wildfire, pests, and invasive species, and ensure long-term forest health and vigor. Forest health protection issues are often directly related to the active management of insects and diseases, invasive plants, and wildfire. Yearly inspections for signs of insects, diseases, or invasive plant infestations should be completed by the landowner.

Ash is a small component of the forest. Emerald Ash Borer activity was not noticed during the field exam; but it has become an established pest in Albemarle county and will eventually kill the ash trees on the property. Unless there are individual “specimen” trees, preventative treatment to suppress EAB activity is not practical. Continued monitoring is the best preventative measure to ensuring forest health. If any unusual problems are found, please contact The Department of Forestry for an examination.

FIRE

Prescribed fire, also known as “controlled burn,” refers to the controlled application of fire by a team of fire experts under specified weather conditions that help restore health to fire-adapted environments to obtain specific management objectives. Prescribed burning is a critical management tool that enhances and benefits forests, grasslands, and wildlife habitats. Prescribed fire is an effective tool in site preparing harvested areas for replanting tree seedlings as well as reducing excessive amounts of hazardous fuel build up and catastrophic damage of wildfire on our lands and surrounding communities. Prescribed fire is one of the most effective tools we have in preventing the outbreak and spread of wildfires.

Protection of your property from wildfire is essential. Wildfire rapidly destroys valuable timber, wildlife, and property. From February 15 through April 30, open-air fires are not permitted within 300 feet of woodland, bushland, or field containing dry grass or other inflammable material between midnight and 4:00 p.m. The number one cause of wildland fire in Virginia is debris burning. In other words, MOST of the fires that occur could have been prevented. In the case of an emergency, please report all woods fires to your local County Fire Dispatch Center at 9-1-1.

CARBON CYCLE

All forest plants and soils “store” carbon, so active forest management influences the natural cycles of that storage in both living and dead plant material. The removal of carbon from the atmosphere is the process called carbon sequestration. Carbon sequestration is the process by which atmospheric carbon dioxide is consumed by trees, grasses, and other plants through photosynthesis and stored as carbon in biomass (trunks, branches, foliage, and roots) and soils. Sustainable forestry practices can increase the ability of forests to sequester atmospheric carbon while enhancing other ecosystem services, such as improved soil and water quality. Planting new trees and improving forest health through thinning and prescribed burning are some of the ways to increase forest carbon in the long run. Harvesting and regenerating forests can also result in net carbon sequestration in wood products and new forest growth.

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WETLANDS

Wetlands include areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas. Wetlands are also highly diverse and productive ecosystems with emphasis on supporting timber production, water quality protection, wildlife habitat, and more. It is important for you to be aware of and understand the laws and regulations related to forestry practices before engaging in wetland management activities on your land. Chapter 9 of the publication “Virginia’s Forestry Best Management Practices for Water Quality Technical Manual, 2011” offers many of the guidelines for forestry activities within a wetland. The publication can be found on the web at:

<http://www.dof.virginia.gov/print/water/BMP/Technical/BMP-Technical-Guide.pdf>. Your local Virginia Department of Forestry forester can provide information on forestry practices permitted in wetlands.

BIOLOGICAL DIVERSITY

Biodiversity is the variety of life (including diversity of species, genetic diversity, and diversity of ecosystems) and the processes that support it. Landowners can contribute to the conservation of biodiversity by providing diverse habitats. It is important to select management options that offer the greatest opportunities for promoting wildlife habitats and conserving biodiversity while fulfilling other land management objectives. Some of these options include, but are not limited to, the conservation of wildlife habitats and biodiversity by:

1. Managing stand-level habitat features.
2. Promoting aquatic and riparian areas.
3. Managing landscape features.
4. Conserving rare species and communities.
5. Protecting special features and sites.

AGROFORESTRY/SILVOPASTURE

Agroforestry intentionally combines agriculture and forestry to create integrated and sustainable land use systems. Agroforestry takes advantage of the interactive benefits from combining trees and shrubs with crops and/or livestock. In the United States, agroforestry is commonly divided into five main practices: Windbreaks, Alley Cropping, Silvopasture, Riparian Forest Buffers, and Forest Farming.

Silvopasture combines trees with forage and livestock production. The trees are managed for high-value saw logs while providing shade and shelter for livestock and forage, reducing stress and sometimes increasing forage production. Silvopasture is increasingly popular in the southeastern region of the United States as a way to supplement timber income on small pine plantations and some hardwood stands. However, there can be problems with combining the two management schemes if it is not done correctly or actively managed. This management system requires active rotational grazing to avoid damage to the standing trees and allowing the forage to recover. Before

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any new silvopasture system is established, you should thoroughly explore the associated economic and environmental considerations along with local land use, zoning, cost-share programs, and tax regulations.

HIGH CONSERVATION VALUE FORESTS

These are forests of outstanding and critical importance due to their environmental, social, biodiversity, or landscape values. High Conservation Value Forests are considered critically important because they contain a unique combination of values. These can be social, cultural, biodiversity and environmental values.

- **Social or cultural values** are aspects of a forest that are critical to the surrounding community's identity. They can range from significant historical features (such as sacred sites or burial grounds) to the forest's role within the community—for example, whether local residents have traditionally depended on the forest for berries, firewood, or other products.
- **Biodiversity values** are critical to preserving local flora and fauna. Such values could include rare ecosystems or habitats, or unusual communities of plant or animal species. Keep in mind that these ecosystems and species need not be on state or federal Threatened or Endangered Species lists—they may just be considered rare regionally or locally.
- **Environmental values** can benefit the whole community. Some examples are forests whose presence helps protect local watersheds or prevent erosion in vulnerable areas.
When forestry professionals and other experts evaluate a forest as a potential HCVF, they look at the entire landscape—not just a single stand of trees—and consider all of these values.

Places that combine and contain these features are rare, so it's especially important to protect them. (*American Forest Foundation*)

INTEGRATED PEST MANAGEMENT

A pest control strategy that uses a variety of complementary strategies including mechanical devices, physical devices, genetic, biological or cultural management and chemical management (*U.S. EPA*).

Integrated Pest Management (IPM) combines several appropriate pest control tactics into a single plan to reduce pests and their damage to an acceptable level. Using many different tactics to control a pest problem causes the least disruption to the living organisms and non-living surroundings at the treatment site. Relying only on pesticides for pest control can cause pests to develop resistance to pesticides, can cause outbreaks of other pests, and can harm surfaces and non-target organisms. With some types of pests, only using pesticides achieves very poor control.

To solve pest problems, first:

- Identify the pest or pests and determine whether control is warranted for each,

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- Determine pest control goals,
- Know what control tactics are available,
- Evaluate the benefits and risks of each tactic or combination of tactics,
- Choose the most effective strategy that causes the least harm to people and the environment,
- Use each tactic in the strategy correctly, and
- Observe local, state, and Federal regulations that apply to the situation.

The best strategy for each situation depends on the pest and the control needed.

(Michael J. Weaver, Patricia A. Hipkins, Virginia Tech Pesticides Program, 2013)

10-YEAR RECOMMENDED SCHEDULE OF MANAGEMENT ACTIVITIES

YEAR	STAND	ACTIVITY	*POSSIBLE COST SHARE	FUTURE STAND CONDITIONS		
				Year	Stocking	Species
2020	A	Clear-cut harvest Parcel A and reforest with pine		2022	500 tpa	Loblolly or shortleaf
2021	FF(1,2), Open, H	Control invasive species and establish new pine plantation		2022	500 tpa	Loblolly or shortleaf
2021	FF 3	Control invasive species and establish shrub buffer around pond. Establish pollinator meadow on the residual field.		2022		Mixed
2025	B & C	Consider shelterwood or patch clear-cut operations		2027	Variable	Mixed
2029		Have Forest Management Plan updated				

This schedule may need to be adjusted depending on financial needs, timber markets, timing of actual harvest, and availability of contractors.

**Cost share program eligibility requirements vary between the programs and funding may not be available. Contact your local DOF Forester for up-to-date information about the various programs.*

RT – Reforestation of Timberlands Program

WHIP – Wildlife Habitat Incentives Program

EQIP – Environmental Quality Incentives Program

AgBMP – Agricultural Best Management Practices Program

CRP – Conservation Reserve Program

CREP – Conservation Reserve
Enhancement Program

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STAND DATA SUMMARY

Parcel	Forest Type	Acres	Year Estab.	Age	Site Index	Avg. DBH	Stocking/Density	Stand Quality	Annual Growth	Other Important Stand Attributes (nat. regen., invasive plants, etc.)
A	Lob	41	1980	39	Good	13	115BA	Good	Poor	Ailanthus, stilt grass, wine berry, crown ratios < 25%, monitoring wells
B, B1	Hdwd	48	N/A	N/A	Good	13	63BA	Fair-Good	Fair	Variable stand surrounding landfill
C	Hdwd	21	N/A	N/A	Good	14	83BA	Good	Good	Nice stand
D	Mixed	6	1996-8	20	Good	6	Moderate	Fair	Good	Visual Buffer
E & F	Lob	2	1996-8	20	Good	6	Over	Good	Good	Mostly pulpwood, obtaining crown closure
G	Hdwd	17	Var	N/A	Good	11	80BA	Good	Variable	Monitoring wells
H	Mixed	5	N/A	N/A	Fair	6	Over	Poor	Poor	Overgrown field
Riparian	Hdwd	24	N/A	20	Good	8	70BA	Good	Good	Borders streams
SMZ	Hdwd	20	N/A	N/A	Good	Var	Well	Fair	Good	Borders streams

Parcel: Identifying letter or number for each parcel
Forest Type: **Pine** – by primary species
Pine/Hardwood – by primary species or major species group
Upland Hardwood – by pure species or major species group
Bottomland Hardwood – by pure species or major species group

Site Index: For dominant species present, indicate base age
Stocking/Density: Basal area or trees per acre
Other Important Stand Attributes: Is natural regeneration present?
Are there invasive plant species present?
(species and level of presence – heavy, moderate, low)

Appendix A
Threatened and Endangered Species Report

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Appendix B USDA Soil Resource Report

Appendix C Invasive Species Synopsis

Invasive, non-native species are species that were accidentally or deliberately introduced through ongoing commercial trade operations. They are a persistent threat to native plant communities across Virginia because of their ability to become quickly established on sites where disturbances occur. Native hardwood forests are particularly vulnerable due to a continuous history of land disturbances that have fragmented our forests and exposed them to invasion from these highly aggressive plant species. The following invasive species are a particular threat to the future quality and composition of the forest.

1. Tree of Heaven (*Ailanthus altissima*) – A native of central China, it is a rapidly growing, deciduous tree that is well-established and increasing in dominance in Virginia forests. It was introduced to North America in Philadelphia in 1784 for horticultural purposes and by Chinese immigrants to California during the gold rush in the mid-1850s. It is now widely distributed in 42 states across the country. It is an extremely opportunistic species, thriving everywhere from sidewalk cracks to fields and forest interiors. The species is a successful invader because it can reproduce through seed production and vegetatively through sprouting and root suckers. A single tree can produce an enormous seed bank each year (one report cited 325,000 seeds per tree) and has a high seed germination rate. If a tree falls or is cut, it will respond with vigorous growth, producing large numbers of root suckers and stump sprouts. Most forested areas in the mountains and piedmont have a well-established seed bank that quickly responds after a disturbance occurs. It appears to grow and spread especially well on deep and loamy soils where yellow poplar thrives. As a result, forest types containing yellow poplar might be the most threatened. Though difficult to control, the most effective means for eradicating *Ailanthus* requires felling individual trees and spraying Roundup or Garlon-4 to freshly cut stumps or applying Garlon-4 around the base of sapling or smaller trees. Since *Ailanthus* is so persistent, follow up treatments will be necessary. To begin such an effort, the operation should concentrate on seed producing trees.

2. Multiflora Rose – (*Rosa multiflora*) rose is listed as a noxious weed in Virginia. It is a perennial shrub that tolerates a wide range of soil, moisture and light conditions. It is able to invade many different habitats, including fields, forests, prairies, and some wetlands. While it is usually found in fields, pastures and along roadsides, multiflora rose can also appear in forest situations under filtered shade, or where fallen trees have opened a gap in the canopy.

Multiflora rose grows aggressively and reproduces vigorously. It produces large numbers of fruits (hips) that are eaten and dispersed by a variety of birds and animals. Abundant seeds are contained in the hips; an average plant can produce an estimated one million seeds annually. These seeds remain viable in the soil for up to 20 years. Multiflora rose can also proliferate by forming new plants from the tips of arching or trailing canes that take root where they contact the ground.

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Once established, multiflora rose exhibits a tenacious growing habit. It forms impenetrable monotypic thickets that choke out beneficial native plant species. It is highly competitive for soil nutrients, water and sunlight, often preventing the regeneration of tree species. It has a nominal wildlife value compared to other plants, and its monotypic nature is detrimental to nesting of native birds.

Mechanical: Frequent and repeated mowing or cutting can effectively control severe infestations of mature plants. Stems should be cut at least once, and as frequently as six times per growing season, for two to three successive seasons. Young plants may be pulled by hand, provided the entire root is removed.

Chemical: Mechanical treatment of multiflora rose can be enhanced by an application of an appropriately labeled herbicide. Follow any mowing immediately with an application of Arsenal or a glyphosate-based herbicide (such as Roundup) in order to insure kill of the entire root system. This cut and spray method is most effective if done late in the growing season.

Foliar applications can also be effective, especially on young plants, or sprouts from recently cut or pulled plants. Escort, Arsenal AC (late season), Ally and Cimmaron are all labeled for a foliar treatment during the growing season, and will usually only require a single application. These herbicides are selective in that they will only affect very specific types of vegetation. Repeated applications of a glyphosate-based herbicide are less effective, but these types of herbicide have little soil activity. Glyphosate-based herbicides are designed to affect a broader range of vegetation.

3. **Japanese Stilt Grass-** (*Microstegium vimineum*) Japanese stilt grass is an annual plant that forms dense mats. It has a sprawling habit and grows slowly through the summer months, ultimately reaching heights of 2 to 3 1/2 ft. (6-10 dm.). While Japanese stilt grass prefers moist soils that are shaded from full sun, it is adapted to a wide range of environmental conditions. It can spread rapidly following a disturbance and readily invades areas subject to regular mowing, tilling, foot traffic, or other soil-disturbing activities. It is capable of forming extensive dense monotypic stands that crowd out native vegetation.

Japanese stilt grass reproduces exclusively from seed. It germinates beginning in early spring, continuing through the early summer months. The plant flowers in late August, and produces seed from late summer through fall. A single plant can produce up to 1000 seeds, which are fire resistant and can remain viable in the soil for 5 years or more. When suitable environmental conditions occur, germination rates of stilt grass approach 100 percent. The plant and the seeds are of minimal wildlife value.

A variety of control methods are available for stilt grass, depending on the extent of the infestation, the type of habitat, and the availability of labor and other resources. The key to control is to provide an environment that gives native vegetation a competitive advantage over stilt grass. In order of priority, management options should include preventing the introduction of stilt grass into non-infested areas, eliminating existing infested areas, and re-establishing desired vegetation. Early

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identification and control of new infestations will also reduce the likelihood of establishment.

Manual: Stilt grass is a shallow-rooted annual that can be pulled by hand throughout the growing season, especially when the soil is moist and entire plants with roots can be removed. Pulling is easier and probably more effective in mid-to-late summer when the plants are much taller and more branched. At this stage, entire plants can be easily removed by grabbing the basal portion of a plant and pulling firmly. In short time, a fair amount of stilt grass can be pulled and piled up to dehydrate on site. If plants are already in the fruiting stage, they should be bagged and disposed of offsite to prevent dispersal of seed. Avoid pulling any native grasses that may be growing intermingled with stilt grass. Because hand-pulling plants disturbs the soil and may expose stilt grass seed from previous seasons, late season pulling will avoid the likelihood of seed germination. Hand pulling of plants will need to be repeated and continued for a minimum of seven seasons until the seed bank is exhausted.

Mechanical: Stilt grass can be mowed in late summer (i.e., August through September) when the plants are flowering but preferably before seed is produced. This can be done using a lawn mower or "Weed Whacker" type machine or a scythe. Because stilt grass is primarily an annual plant, cutting late in the season before the plants would die back naturally avoids the possibility of regrowth. Recent information suggests that stilt grass plants cut early in the summer respond by regrowing and flowering soon after cutting, much earlier than they would normally flower.

Chemical: The most effective way to manage stilt grass is to avoid its introduction by using pre-emergent herbicides to prevent its establishment where possible. Both Journey and Plateau herbicides are labeled for treatment. For extensive stilt grass infestations, a combination of a pre-emergent and systemic glyphosate-based herbicide (e.g., Roundup) is a practical and effective method. If applying glyphosate to stilt grass in wetland sites, use the formulation labeled for wetland areas (e.g., Rodeo). Apply a 2% solution mixed with water (8 oz. per 3 gals. mix) and a surfactant in late summer. Be careful to avoid application to non-target plants because glyphosate is a non-specific herbicide that will kill or damage most plant species it contacts.

4. **Oriental Bittersweet- (*Celastrus orbiculatus*)** Please see document in the rear sleeve holder of this plan. Oriental bittersweet is a deciduous twining vine that can climb and overcome native trees and vegetation. Overtime it can form dense monocultures. It spreads easily both by vegetative propagation and by seed. Selection of an appropriate control strategy and herbicide is based on several factors, including severity of infestation, age of the plants to be treated, and risk of herbicide injury to favored vegetation. Regardless of the herbicide chosen, it is imperative that all labeling instructions be followed. A more complete description can be found at the following web address:
http://www.dcr.virginia.gov/natural_heritage/documents/fsceor.pdf.

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5. Privet- (*Ligustrum* spp.) It has no natural control agents in North America.

Therefore, it can form dense thickets that out competes native vegetation. The privets can invade natural areas such as floodplain forests, woodlands, and disturbed agricultural fields. They generally expand along fence-rows, windbreaks and roadsides (Haragan 1996). *L. japonicum* and *L. sinense* invade woodlands in the eastern and southeastern U.S. (Faulkner et al. 1989; Stone 1997). Forest gaps can also become invaded since birds often disperse *Ligustrum* seeds. They grow well from seed, root and stump sprouts. Mechanical disturbance can increase re growth.

Control can be difficult but achievable in time. Controlling plants by hand is effective for plants with stems one inch or less in diameter if the entire root is removed. Mechanical methods such as cutting or plowing will result in an increase of growth without other follow up treatments. Privet can be controlled with use of a glyphosate herbicide, which is a nonselective systemic herbicide that negatively affects all green vegetation it contacts. A foliar application in late summer is the recommended treatment with the mixture mixed to label specifications. Spraying in late fall after most natives have dropped their leaves decreases the chance of damaging desirable vegetation. A combination of cutting followed immediately by application of glyphosate to the stump is also reported to be effective in ensuring control. A more complete description can be found at the following web address:

http://www.dcr.virginia.gov/natural_heritage/documents/fslisi.pdf

6. **Autumn Olive – (*Elaeagnus umbellata* Thunberg), Russian olive (*Elaeagnus angustifolia* L.)**- Autumn olive is a deciduous shrub or small tree in the Oleaster family. Leaves are alternate, oval to lanceolate, and untoothed. The underside of the dark green leaf is covered with silver-white scales. The plant may grow to a height of 20 feet. The small, light yellow flowers are borne along twigs after the leaves have appeared early in the growing season. The small, round, juicy fruits are reddish to pink, dotted with scales, and produced in great quantity. Autumn olive is easily confused with a closely related species, Russian olive (*Elaeagnus angustifolia*), which is also an invasive species. Russian olive has elliptic to lanceolate leaves, its branches are usually thorny, and its fruit is yellow, dry and mealy. Identification should be confirmed by a specialist. Seedlings and sprouts can be hand pulled when the soil is moist to insure removal of the root system. On larger plants, cutting alone results in thicker, denser growth. Burning during the dormant season also results in vigorous resprouting. A glyphosate herbicide can be used to control larger plants. Foliar application has proven effective in controlling these species. Since glyphosate is nonselective and will affect all green vegetation, care should be taken to avoid impacting native plant species. More information can be found online: http://www.dcr.virginia.gov/natural_heritage/documents/fselum.pdf.
7. **Wineberry (*Rubus phoenicolasius*) Maxim.** Origin: Japan, Korea and China. Wineberry, or wine raspberry, is a spiny shrub that was introduced into the United

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States in 1890 as breeding stock for new *Rubus* (raspberry genus) cultivars and still used today by berry breeders. It is prized for its delicious edible raspberry-like berries that are produced in abundance in summer. Wineberry is found from New England and eastern Canada to North Carolina and west to Michigan and Tennessee. It occurs along forest, field, stream and wetland edges and in open woods, preferring moist habitats. Wineberry forms dense shady thickets that displace native plants and significantly alter habitat structure. Do not plant wineberry. It can be controlled through mechanical means or by treating the canes with a systemic herbicide like glyphosate or triclopyr (see [Control Options](#)). Native blackberries and non-invading cultivated raspberry would be good alternatives.

8. **Emerald Ash Borer (*Agrilus planipennis* Fairmaire)** – *A native of China, it is an exotic beetle that was discovered in southeastern Michigan near Detroit in the summer of 2002. The adult beetles nibble on ash foliage but cause little damage. The larvae (the immature stage) feed on the inner bark of ash trees, disrupting the tree's ability to transport water and nutrients. Emerald ash borer probably arrived in the United States on solid wood packing material carried in cargo ships or airplanes originating in its native Asia. Emerald ash borer is also established in Windsor, Ontario, was found in Ohio in 2003, northern Indiana in 2004, northern Illinois and Maryland in 2006, western Pennsylvania and West Virginia in 2007, Wisconsin, Missouri and Virginia in the summer of 2008, Minnesota, New York, Kentucky in the spring of 2009, Iowa in the spring of 2010, Tennessee in the summer of 2010, Connecticut, Kansas, and Massachusetts in the summer of 2012, New Hampshire in the spring of 2013, and North Carolina in the summer of 2013. Since its discovery, EAB has:*
- Killed tens of millions of ash trees in southeastern Michigan alone, with tens of millions more lost in Connecticut, Illinois, Indiana, Iowa, Kansas, Kentucky, Massachusetts, Maryland, Minnesota, Missouri, New Hampshire, New York, North Carolina, Ohio, Ontario, Pennsylvania, Tennessee, Quebec, Virginia, West Virginia, and Wisconsin.
 - Caused regulatory agencies and the **USDA** to enforce quarantines (**Michigan, Connecticut, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Massachusetts, Minnesota, Missouri, Ohio, New Hampshire, New York, North Carolina, Ontario, Pennsylvania, Tennessee, Virginia, West Virginia, Wisconsin, and Environment Canada**) and fines to prevent potentially infested ash trees, logs or hardwood firewood from moving out of areas where EAB occurs.
 - Cost municipalities, property owners, nursery operators and forest products industries tens of millions of dollars.

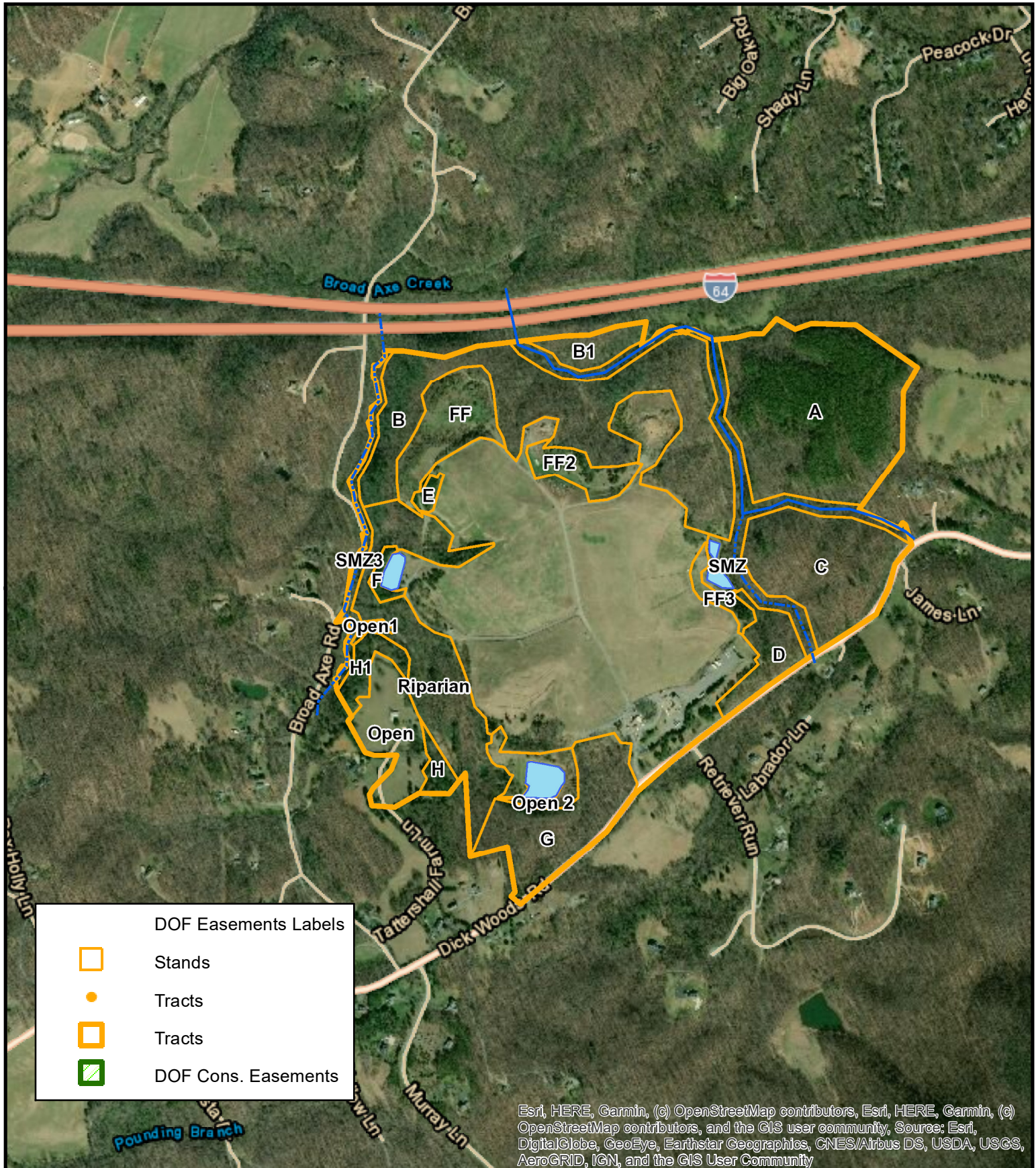
Above information obtained from <http://www.emeraldashborer.info/virginiainfo.cfm>)



Rivanna Solid Waste Authority

Authority Alb-95-050

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6/10/2019



While VDOF has attempted to ensure that the features shown on this map are accurate, VDOF did not perform survey work or otherwise verify information provided to it in preparing this map and all features and acreages shown are approximate. VDOF expressly disclaims all warranties of any type concerning this map, and any use of the map assumes you understand and agree with this disclaimer.

Feet
0 470 940 1,880

Strategic Plan Update

for the Board of Directors

Presented by: Katie McIlwee, Communications Manager

November 19, 2019



Strategic Direction

Values

The Rivanna Water & Sewer and Solid Waste Authority are committed to the following values:

Integrity
Teamwork
Respect
Quality

Vision

To serve the community and be a recognized leader in environmental stewardship by providing exceptional water and solid waste services.

Mission

Our professional team of knowledgeable and engaged personnel serve the Charlottesville, Albemarle, and UVA community by providing high quality water treatment, refuse, and recycling services in a financially responsible manner.

Year 2 Implementation

Workforce Development

To attract, develop, and retain a professional, highly skilled, dedicated, and versatile team

Operational Optimization

To efficiently, reliably, and safely provide high quality services, assuring the best value for our customers

Communication & Collaboration

To foster a culture that encourages open communications and strengthens relationships

6 Goals



14
Strategies



58 Tactics

Environmental Stewardship

To be a leader in our community's environmental protection and education

Solid Waste Services

To provide reliable, convenient, and innovative solid waste and recycling services

Infrastructure & Master Planning

To plan, deliver, and maintain dependable infrastructure in a financially responsible manner

Workforce Development

Overall Completion:
70% 

Goal Team Leader: Betsy Nemeth & Lonnie Wood

Conduct Training Needs Assessment & Enhance the Training Program

- Completed a Project Planning course for several Managers with PVCC.
- Began implementing online training through VRSA and will continue for all employees through the end of this year.
- Began Managers training using the video training library from VRSA (completed Incident Reporting and Preventing Sexual Harassment for Managers training).

Next Steps:

- Working with PVCC on math tutoring for Water and Wastewater Operators who will be testing for higher licenses.
- Exploring employer branding (via social media) to aid in new employee recruitment
- Expanding New Employee Orientation to a full day, to better cover important topics such HR/Payroll and benefits, and safety

Operational Optimization

Overall Completion:
47% 

Goal Team Leader: Dave Tungate

Continually Evaluate, Prioritize, & Improve Key Business & Operational Process

- Evaluated biosolids disposal process, toured outside facilities, and attended VA Biosolids Council Meeting
- Optimized S. Rivanna WTP belt press hours of operation, this included hiring a contractor to clean out the EQ Basin to remove excess filter media
- Completed the Corrosion Inhibitor Study

Next Steps:

- After location has been determined, purchase, install, and integrate nitrogen sensors in the MC wastewater treatment process
- Install high speed fiber to South Rivanna WTP
- Implement new corrosion inhibitor product at WTPs

Protect Workforce and the Public Through Continually Growing Rivanna's Culture of Safety

- Reviewed final version of the "Risk and Resilience" report required by AWIA for water utilities
- Installed remaining web-based cameras for security and monitoring facilities
- Completed a security assessment of the Moores Creek Facility

- Integrate web-based cameras with the Security 101 project
- Complete "Risk and Resilience" project by Jan 2020

Communication & Collaboration

Overall Completion:
45% 

Goal Team Leader: Katie McIlwee

Create & Maintain Internal Communication Platforms

- MS Teams
- DocLink implementation
- Continued collaboration w/ Employee Council
- Published bi-monthly newsletter

Next Steps:

- Continue implementation of DocLink
- Continue to maintain high level of communication through Employee Council, Employee Newsletter, and Employee Portal

Create & Implement a Comprehensive Public Outreach Plan

- Awarded RFP for photography /videography services
- Continued/ongoing website maintenance
- Continued to reach out to schools and local groups to provide facility tours and informational presentations

- Plan and schedule project/facility videos
- Take updated facility photos for use on the website and in presentations

Enhance Internal & External Communication

- United Way Day of Caring
- Imagine a Day Without Water
- Rivanna Flow Fest
- Quarterly Teambuilding events
- Participate in monthly TAC meetings with ACSA & City

- Planning the next NW Central VA Utilities Managers Lunch & Learn
- Research use of Social Media
- Planning the next Managers Meeting w/ ACSA & City

Environmental Stewardship

Overall Completion:
50% 

Goal Team Leader: Andrea Terry

Increase Internal Environmental Engagement

- United Way Day of Caring
- Employee Environmental Council established

Next Steps:

- Continue to look for opportunities, such as stream cleanups, tree plantings, etc. to engage employees

Provide Regional Leadership in Environmental Stewardship Partnerships

- Imagine a Day Without Water
- Rivanna Flow Fest
- Tree planting at Crozet Elementary
- Stormwater partnership
- Rivanna Renaissance Conference participation

- Continue to look for opportunities for collaboration
- Explore the potential for a Regional Glass Recycling Pilot program w/ other localities

Evaluate Potential Opportunities for Additional Environmental Activities at RWSA Facilities

- Advertised and awarded contract for Buck Mountain Master Plan
- Oyster shell collection at McIntire Recycling Center
- Political sign collection program

- Complete Buck Mtn. MP
- Review Wetland Mitigation Grading quotes and award project
- Evaluate potential for use of solar at RWSA facilities

Solid Waste Services

Overall Completion:
45% 

Goal Team Leader: Phil McKalips

Determine Community Needs & Preferred Service Levels

- Continue to provide facility tours to local schools
- Created recycling stickers for customers' home bins
- Political sign collection program
- Completed Composting Master Plan

Next Steps:

- Continue reaching out to schools, civic groups, etc. for tours and informational presentations
- Identify places at RSWA facilities and in the community for informational flyers
- Continue collaboration with SWAAC

Enhance Partnerships with Local Governments and UVA

- Create an Earth Day YouTube recycling video competition with local schools
- Define contest details (subject, length, judging, awards, start/end dates)
- Partnered with VOSRP to set up oyster shell recycling container at McIntire

- Complete contest rules and establish other competition details
- Reach out to local schools and begin advertising competition
- Sponsor a Regional Glass Recycling Pilot program w/ other localities

Infrastructure & Master Planning

Overall Completion:
48% 

Goal Team Leader: Scott Schiller

Implement an Authority- Wide Asset Management Program

- Completed scope of work for Phase 2 of program development
- Began providing asset data to the consultant
- Began development of an RFP for procurement of CMMS software and implementation
- Completed bond refinancing

Next Steps:

- Use collected data to begin development of complete asset hierarchy structure & inventory
- Advertise RFP for CMMS software and implementation

Develop & Maintain Long-Term Master Plans for all Critical Assets

- Develop list of asset classes to use within the Master Plan matrix
- Confirmed master plan champions
- Began to implement projects from the Technology Master Plan
- Began to develop procedure to link the master plan matrix to the CIP development process

- Prepare draft procedure for asset class master plan champions, have team review and comment
- Continue development of Master Plan/CIP matrix

Questions?