APRIL 2006

R·W·BECK




FINAL REPORT

Regional Solid Waste Management Financial, Operational, and Regulatory Analysis

Prepared for

Virginia's Region 2000 Partnership

Local Government Council

April 21, 2006

Mr. Robert White
Deputy Director
Virginia's Region 2000 Partnership
Local Government Council
915 Main Street, Suite 202
Lynchburg, Virginia 24504

Subject: **Regional Solid Waste Management Financial, Operational and Regulatory Analysis - Final Report**

Dear Mr. White:

R. W. Beck is pleased to submit our final report to Virginia's Region 2000 Partnership Local Government Council (Council) of the "Regional Solid Waste Management Financial, Operational and Regulatory Analysis" that we have completed.

Introduction

As a part of its Strategic Planning initiative, Virginia's Region 2000 Partnership Local Government Council (the Council) identified regional solid waste management as a concept that should be investigated as a part of its effort to promote regional cooperation and more effective provision of public services within the Council's community. The following local governments within and adjacent to the Council are currently working together on this concept:

- Amherst County;
- Campbell County;
- Nelson County;
- City of Bedford; and
- City of Lynchburg.

In April 2005, the Council completed a "Regional Solid Waste Management Analysis" with assistance from R. W. Beck. This report evaluated multiple regionalization scenarios such as the joint use of existing facilities, waste-to-energy and transfer stations. This analysis concluded on a preliminary basis that the joint use of existing facilities represents the most viable disposal option for all of the participating communities.

Based on the findings of the 2005 report, the current focus of the participating communities is to develop a regional approach to solid waste management that will result in greater cooperation, decreased cost of providing service to their customers and citizens, and better protection of human health and the environment. By working together, the participating communities also recognize that a coordinated regional approach provides an enhanced ability to control costs as environmental regulations continue to tighten and the need exists to provide better and longer range solid waste planning. The first regional initiative focuses on opportunities to regionalize the joint use of existing disposal facilities.

Key benefits for the joint use of existing facilities include:

- Establishment of a regional solid waste entity would significantly enhance opportunities for other regional solid waste functions such as solid waste management planning, achievement of recycling goals, collection and disposal of household hazardous waste, and more efficient collection and convenience center operations.
- Significant cost savings to local governments and customers from consolidating landfill operations.
- More efficient landfill operations due to increased economies of scale.

Based on this analysis, all of the participating communities have agreed in principal to use their existing disposal facilities together via regionalization. Under this scenario, all of the participating communities would send all solid waste from their communities to one of the landfills in the Council's region (e.g. Amherst County, Campbell County and City of Lynchburg). This would mean that only one of the three landfills would operate at a single time. This approach provides an opportunity to maximize the use of resources and increase economies of scale.

Under this approach, the landfills would have approximately 19 years of capacity assuming a regional start date of July 1, 2007.[1] Based on direction from the Council, R. W. Beck assumed a start date of July 1, 2007. However, all parties recognize that this start date is only an estimate, as the exact date may change due to regulatory, legal and/or operational issues.

Report Overview

The purpose of this report is to provide further detail concerning the following key issues, as organized by section:

- Section 1: Executive summary of key issues and findings.
- Section 2: Understanding of operations of the Regional Entity, including management of all three landfills.
- Section 3: Financial inventory of the various assets and liabilities each community with a landfill would contribute to the regional solid waste system.
- Section 4: Description and estimation of start-up costs and the future annual budget for the Regional Entity.
- Section 5: Evaluation of regulatory issues associated with how to implement the joint use of existing facilities in a regional approach.

[1] This projection is based on a 0.25 percent annual increase in tonnage and the assumption that all waste currently handled by the participating communities will continue.

Preliminary Financial Summary

Based on the work completed throughout this report, R. W. Beck is able to develop preliminary estimates of the financial impact for each community that would participate in the regional approach.[2] Based on this analysis, all of the participating communities will achieve meaningful cost savings with the regional approach, as compared to their current programs. Nelson County and the City of Bedford would reduce their costs based on shorter hauling distances and lower tipping fees. The three landfill communities – Amherst County, Campbell County and the City of Lynchburg – would generate and share excess revenue achieved from more cost effective operations. The following table summarizes the estimated financial benefits by community.

Estimated Financial Benefit by Community

Community	Financial Benefit	
	Annual Value (FY 2008)	Total Net Present Value (FY 2008 – 2024)
Amherst County	$361,971	$4,790,501
Campbell County	$852,047	$11,828,869
Nelson County	$167,319	$2,345,292
City of Bedford	$25,619	$370,952
City of Lynchburg	$643,112	$8,736,716

Notes

1. Amounts the landfill communities (Amherst County, Campbell County and the City of Lynchburg) are based on projected excess revenue and allocated by community relative to the projected amount of remaining airspace when the Regional Entity would begin operations. Amounts for Amherst and Campbell Counties are net of the incremental transportation costs. No incremental transportation costs were assumed for Lynchburg.
2. Amounts for the City of Bedford and Nelson County reflect the projected decrease in tipping fees and reduced transportation costs.
3. Total financial benefit is a based on the net present value of projected annual savings from FY 2008 – 2024, assuming a discount rate of 5 percent.

Conclusion

During the past two plus years, the Council and participating communities have invested significant staff and financial resources examining the feasibility of a regional approach to solid waste management. Based on the analysis completed to date, the regional disposal concept is a well founded and worthwhile endeavor.

In order continue moving from concept to implementation, there is still more work to be done. Completed and future efforts should be worthwhile given the financial and environmental

[2] The financial analysis assumes that all communities and BFI would participate in the regional system in the future as they have in the past.

benefits to be gained. At this time, all of the participating communities should formally decide whether they would like to continue with this effort. Execution of a memorandum of understanding between the participating communities would formally commit each community to this process.

In the future, solid waste issues – ranging from disposal to collection to recycling – will become more challenging due to factors such as rising costs and increased regulations. By working together, the participating communities will be able to address these issues easier over the long-term. To make this concept a reality, each of the participating communities will also need to commit the necessary resources.

If you have any questions concerning the enclosed report please call me at (512) 450-0991. We look forward to future opportunities to assist the Council on this important project.

Sincerely,

R. W. BECK, INC.

Scott Pasternak
Manager

cc: Ms. Teresa Nuckols, Amherst County
Mr. Clarke Gibson, City of Bedford
Mr. Clif Tweedy, Campbell County
Ms. Susan McSwain, Nelson County
Mr. Dave Owen, City of Lynchburg

R. W. BECK
Regulatory Solid Waste Management Financial Operational and Regulatory Analysis

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Executive Summary

1.1 Introduction

As a part of its Strategic Planning initiative, Virginia's Region 2000 Partnership Local Government Council (the Council) identified regional solid waste management as a concept that should be investigated as a part of its effort to promote regional cooperation and more effective provision of public services within the Council's community. The following local governments within and adjacent to the Council are currently working together on this concept:

- Amherst County;
- Campbell County;
- Nelson County
- City of Bedford; and
- City of Lynchburg.

The current focus of the participating communities is to develop a regional approach to solid waste management that will result in greater cooperation, decreased cost of providing service to their customers and citizens, and better protection of human health and the environment. By working together, the participating communities also recognize that a coordinated regional approach provides an enhanced ability to control costs as environmental regulations continue to tighten and the need exists to provide better and longer range solid waste planning. The first regional initiative focuses on opportunities to regionalize disposal activities.

In April 2005, the Council and the participating communities completed a "Regional Solid Waste Management Analysis" with assistance from R. W. Beck. This report evaluated multiple regionalization scenarios such as the joint use of existing facilities, waste-to-energy and transfer stations. This analysis concluded on a preliminary basis that the joint use of existing facilities represents the most viable disposal option for all of the participating communities. Key benefits for the joint use of existing facilities include:

- Establishment of a regional solid waste entity would significantly enhance opportunities for other regional solid waste functions such as solid waste management planning, achievement of recycling goals, collection and disposal of household hazardous waste, and more efficient collection and convenience center operations.

- Significant cost savings to local governments and customers from consolidating landfill operations.
- More efficient landfill operations due to increased economies of scale.
- Reduced air emissions as the City of Bedford and Nelson County would decrease hauling distance by using landfills within the Council, instead of outside of the Council.[1]
- Greater environmental control due to continued operation of environmental systems associated with each community's Subtitle D landfills, and ultimately closure of each landfill sooner than currently permitted.

Based on this analysis, all of the participating communities have agreed in principal to use their existing disposal facilities together via regionalization. Under this scenario, all of the participating communities would send all solid waste from their communities to one of the landfills in the Council's region (e.g. Amherst County, Campbell County and City of Lynchburg). This would mean that only one of the three landfills would operate at a single time. This approach provides an opportunity to maximize the use of resources and increase economies of scale.

Under this approach, the landfills would have approximately 19 years of capacity assuming a regional start date of July 1, 2007.[2] Based on direction from the Council, R. W. Beck assumed a start date of July 1, 2007. However, all parties recognize that this start date is only an estimate, as the exact date may change due to regulatory, legal and/or operational issues.

The purpose of this report is to provide further detail concerning the following key issues, as organized by section:

- Section 2: Understanding of operations of the Regional Entity, including management of all three landfills.
- Section 3: Financial inventory of the various assets and liabilities each community with a landfill would contribute to the regional solid waste system.
- Section 4: Description and estimation of start-up costs and the future annual budget for the Regional Entity.
- Section 5: Evaluation of regulatory issues associated with how to implement the joint use of existing facilities in a regional approach.

1.2 Section 2 - Operational Analysis

There are three landfills with significant remaining capacity in Region 2000 (e.g., Amherst County, Campbell County and City of Lynchburg). Operating as a Regional Entity, only one of the three landfills would accept waste for disposal at a

[1] The City of Bedford is in the process of developing a transfer station that would replace its landfill. Without the regionalization option, the city would transfer its waste outside of the region. Nelson County currently transfers its waste to Amelia County.

[2] This projection is based on a 0.25 percent annual increase in tonnage and the assumption that all waste currently handled by the participating communities will continue.

time. The participating communities would send all of their solid waste to one of these three landfills. The other two landfills would become inactive, or "mothballed," until it is used in sequence when the current regional landfill reaches capacity. Although the other two landfills would not accept waste for disposal, operations would continue to occur from a regulatory perspective (i.e., environmental monitoring, post-closure of closed landfills, site maintenance).

Based on preliminary discussions with staff from the Virginia Department of Environmental Quality (DEQ), this approach would be allowed from a regulatory perspective, as long as steps are taken "to prevent threats to human health and the environment." Refer to Section 5 of this report which discusses efforts that must be undertaken by each participating community and the Regional Entity in order to comply with the DEQ's interpretation of the regulation.

The purpose of Section 2 is to evaluate how to implement the joint use of existing solid waste disposal facilities in a regional approach. This analysis focuses on the operational needs and costs associated with (1) the first facility that would be used as the regional landfill and (2) the other two landfills that will be used sequentially in the future as the regional landfill. The evaluation assumes that initially the regional landfill will dispose of approximately 900 tons of waste per operating day.[3]

1.2.1 Overview of Regional Entity Operations

The purpose of the Regional Entity will be to provide each of the participating communities with landfill disposal for all of the residentially and commercially generated garbage in an environmentally responsible manner. The Regional Entity will manage the active landfill and site and provide services related to the management of the inactive landfills. Operations which are currently provided independently by each of the participating communities, but would be the responsibility of the Regional Entity include:

- Administration
- Operation of the active landfill
- Site and grounds maintenance
- Environmental monitoring and remediation
- Future cell development and closure
- Post-closure care

[3] The quantity of 900 tons per day assumes that waste from BFI (also known as Allied Waste) continues to be disposed of within Region 2000. It is important to mention that BFI is considering developing and operating a transfer station in Appomattox County, which would likely mean that BFI's waste would go directly to this transfer station instead of existing facilities in Region 2000. Although there could be some uncertainty concerning the status of BFI waste, the participating communities and R. W. Beck decided to develop this operational analysis based on the assumption that BFI would continue to use the Region 2000 landfill since BFI has not further pursued facility development and the recent fuel price increases reduce the feasibility of BFI long hauling waste.

- Efforts at the inactive landfills

1.2.2 Site Development

Section 2.3 discusses future site development associated with the three active landfills. R. W. Beck estimated the remaining capacity and site life for each active landfill. In addition, we estimated the life of the active landfills when operated as part of a regional disposal system.

The site life estimates for the three active landfills, when operated as part of the regional system, have been updated since completion of the "Regional Solid Waste Management Analysis" in April 2005 to reflect R. W. Beck's better understanding of the operations at each disposal facility. The site life estimates are based on each facility's remaining airspace as of January 2005 and airspace utilization factor (AUF) (waste density and cover soil usage). To calculate remaining capacity, R. W. Beck relied on data provided by each landfill, which was in the form of either an AUF or a combination of waste density and cover soil usage. The analysis of regional landfill capacity and site development includes:

- Remaining landfill capacity and site life;
- Life of regionally operated landfills; and
- Sequencing of landfills and timing of new cell development.

1.2.3 Facility Operating Days/Hours

Section 2.4 lists the current operating days and hours for each facility. Customers of each facility are familiar with the current hours and days of operation. Therefore, R. W. Beck recommends, at a minimum, maintaining the current operating schedule – 7:00 a.m. to 4:00 p.m. Monday through Saturday at the Regional Landfill. This represents an extended schedule for only the Amherst County landfill.

Based on a review of historical data from the three landfills, it appears that operating hours from 7:00 a.m. to 4:00 p.m. Monday through Saturday should provide customers with sufficient access to the landfill. Also, the facility should be capable of accommodating the increase in waste tonnage during the current operating hours with proper staffing and equipment.

R. W. Beck also recommends that the regional landfill be closed on the four common holidays that each facility is currently closed: New Years, Independence Day, Thanksgiving and Christmas. The landfill should be open on Martin Luther King Day and President's Day.

1.2.4 Staffing

Section 2.5 discusses both the current solid waste staffing levels for the three participating communities and proposed staffing for the Regional Entity. Based on the anticipated tonnage to be received at the regional facility from each of the participating communities and the Regional Entity's other responsibilities at the active

and inactive landfills, Table 1-1 identifies the proposed staff needed to operate the regional solid waste utility. Each FTE represents one 40-hour work shift. Staffing projections include a contingency to account for vacations, sick leave, training, and other absences.

Currently there are approximately 26 FTE City and County employees dedicated to landfill operations at the three existing disposal sites. By consolidating operations, it is anticipated that 21 FTE will be required to run the new regional disposal utility. This is an example of how this regional approach will be more efficient than the current system.

Table 1-1
Regional Solid Waste Utility Staff

Position	FTE
Management	
Director	1
Environmental Compliance and Engineering Manager	1
Business and Human Resources Manager	1
Administrative Assistant	3
Subtotal	6
Operations	
Operations Supervisor	2
Scale House Attendant	2
Equipment Operator II	2
Equipment Operator I	4
Site Maintenance Worker	4
Mechanic	1
Subtotal	15
Total	21

Section 2.5 also provides more detail on staffing related issues, including:

- Overview of staff positions and responsibilities;
- Staff hiring process;
- Contracting regional entity staff to local governments; and
- Hiring of initial staff in order to begin the planning and implementation of the Regional Entity.

1.2.5 Equipment

Section 2.6 describes the equipment currently in use at the three landfills and provides a summary of the equipment needed to operate one active landfill and maintain two

inactive landfills. Table 1-2 summarizes the existing and proposed equipment for the Regional Entity. This table provides an understanding of how the regional approach will provide an opportunity to reduce the overall equipment needs, which will provide further cost savings.

Table 1-2
Existing and Proposed Equipment

Equipment	Existing Equipment	Proposed Equipment
Compactor	5	3
Dozer	2	2
Track Loader	3	1
Wheel Loader	2	1
Hoe	1	0
Pan Scraper	2	1
Dump Truck	1	1
Hook-lift Truck	1	1
Open-top Bins	17	10
Street Flusher	1	1
Fuel Truck	1	1
Service Truck	1	0
Forklift	1	1
Tank Trailer	1	1
Lowboy Trailer	1	1
Flatbed Trailer	1	1
Mad Vac Trailer	1	1
Tractor w/ Bushhog	2	1
Brush Chipper	1	0
Riding Mower	1	1
Personnel Vehicles	9	6
Communication Radios	24	20
Freon Remover	2	1

1.2.6 Operations at Inactive Landfills

Certain operations at the non-active landfills should be provided by the Regional Entity to meet current customer service needs for each of the participating communities, comply with regulatory requirements associated with the “mothballed” landfills, and operate and maintain environmental control systems (that will continue to function while the landfill is not actively accepting waste for disposal). Discussions in Section 2.7 include:

- Special waste collection
- Environmental monitoring and maintenance of inactive facilities

1.2.7 Landfill Support Functions

Section 2.8 discusses other functions that will need to occur to support operation of the Regional Entity's disposal system. The analysis in Section 2.8 is based on interviews conducted with various regional authorities in the State of Virginia. The analysis also included a review of public information available pertaining to these regional authorities. The landfill support functions discussed in Section 2.8 include:

- Human Resources
- Retirement System
- Insurance
- Legal Counsel
- Consultants
- Accounting

1.2.8 Landfill Support Facilities

Section 2.9 discusses other facilities and other infrastructure required at the active and/or inactive landfill sites associated with the Regional Entity operation of the disposal system. Staff and equipment proposed in Section 2.5 account for operations of these facilities. The facilities and infrastructure discussed in Section 2.9 includes:

- Scale facility operations
- Leachate storage and disposal
- Storm water facilities
- Landfill gas control systems
- Borrow sources
- Regional entity administration building
- Accounting and billing software

1.2.9 Facility Capital Improvements

Section 2.10 identifies major facility capital improvements associated with preparing the facility for operation as the regional landfill to accommodate increased traffic volumes and waste tonnages. These facility capital improvements exclude future cell development under Regional Entity operation. Mention no major improvements at LB, and basis for recommendation for it to be used first as the regional landfill.

City of Lynchburg

The Lynchburg landfill will not require significant capital improvements in order for it to be used as the regional landfill. This is the primary reason why R. W. Beck has recommended using this landfill as the first regional facility.

Campbell County

Before the Campbell County landfill can be operated as the regional facility, several improvements may be required in order to accommodate the increase in the number of customers and waste tonnage. Table 1-3 summarizes these improvements and provides and estimate of the cost associated with each. Section 2.10.1 provides more detail on each improvement.

Table 1-3
Future Campbell County Capital Improvements

Campbell	Low Estimate	High Estimate
Scale House Improvements	$118,000	$240,000
Widen Livestock Road	$190,000	$380,000
Reconfigure Livestock Rd - Calohan Rd Intersection	$750,000	$1,500,000
Total	$1,058,000	$2,120,000

Amherst County

Similar to Campbell County landfill, the Amherst County landfill would require several site and facility improvements in order to accommodate the increase in the number of customers and waste tonnage. Table 1-4 summarizes these improvements and provides and estimate of the cost associated with each. Section 2.10.2 provides more detail on each improvement.

Table 1-4
Future Amherst County Capital Improvements

Amherst	Low Estimate	High Estimate
Widen Isaac Walton Rd	$1,000,000	$2,100,000
New Site Entrance	$150,000	$250,000
New Scale House	$60,000	$115,000
Relocate Scales	$35,000	$70,000
On-site Road Improvements	$25,000	$50,000
New Equipment Maintenance Building	$215,000	$425,000
Total	$1,485,000	$3,010,000

1.2.10 Optional Regional Entity Operations

The following solid waste related activities could be provided by each of the jurisdictions but may be most cost-effectively performed by the Regional Entity due to the availability of staff and equipment. However, since these activities are not associated with providing landfill disposal or special waste handling for the participating communities, the Regional Entity should be reimbursed for the work. These optional Regional Entity operations include:

- Customer convenience stations
- Household hazardous waste (HHW) collection
- Post-closure care of closed landfills
- Remediation actions at closed landfills

1.3 Section 3 - Financial Inventory

In Section 3, R. W. Beck developed a financial inventory of the various assets and liabilities each community with a landfill would contribute to the regional solid waste system. To develop this analysis, R. W. Beck met with staff from each facility, toured each facility and received/developed asset and liability lists from each of the landfill communities.

Within this section, R. W. Beck provides a discussion of the methodology to value the assets and liabilities for each landfill. The financial inventory is intended to assist each of the participating communities to determine the value of landfill assets and liabilities based on actual cost, in order to ensure that each entity is compensated in an equitable manner for their expenditures.

Assets

By working closely with each of the communities with landfills, R. W. Beck developed the values for each of the following categories of assets. Values, based on either book value or in some case market value, were assigned to:

- Site improvements;
- Landfill capacity and land;
- Buildings;
- Equipment and rolling stock;
- Closure and post-closure reserve funds;
- Other potential assets; and
- Assets to be used but not owned by Regional Entity.

Liabilities

Each community also has liabilities that need to be accounted for in the transition to a Regional Entity. R. W. Beck reviewed the extent to which each community had liabilities related to:

- Existing debt and leases;
- Closure and post-closure costs; and
- Existing closed landfills.

Asset and Liability Summary

For each of the three landfills, R. W. Beck developed a summary table that lists each asset and liability based on the categories included in this section or the report. Table 1-5 provides the summary for each community.

Table 1-5
Asset and Liability Summary by Landfill

Assets/Liabilities	City of Lynchburg	Campbell County	Amherst County
Assets			
Site Improvements	$1,768,653	$516,471	$305,995
Landfill Capacity and Land	$2,947,112	$1,096,017	$1,441,851
Buildings	$42,766	$175,305	$116,963
Equipment and Rolling Stock	$674,562	$541,507	$29,710
Closure and Post-Closure Reserve Funds	$4,768,172	$0	$0
Subtotal	$10,201,263	$2,329,300	$1,894,520
Liabilities			
Outstanding Debt	($3,718,252)	$0	($1,089,337)
Closure	($1,705,786)	($1,633,366)	($871,530)
Post-Closure	($3,062,386)	($725,842)	($659,141)
Subtotal	($8,486,423)	($2,359,208)	($2,620,008)
Net Assets	$1,714,840	($29,908)	($725,488)

Additionally, as detailed in Section 3.5, R. W. Beck outlined a practical approach for conducting the transactions between the individual communities and the Regional Entity to reduce the number of transactions required to transfer the assets and liabilities.

1.4 Section 4 - Financial Analysis

Until establishment of the Regional Entity, the participating communities will continue to incur costs associated with the establishment of the Regional Entity. Once the Regional Entity is established, the Regional Entity will have its own operating budget. The purpose of this section is to describe and estimate these start-up costs and the future annual budget. This section concludes with a discussion of other related financial issues.

1.4.1 Regional Entity Start-up Costs

Prior to the time when the Regional Entity begins operations, there will be a need to fund several tasks in order transition to a regional system. Table 1-6 provides an overview of the estimated costs for these tasks. R. W. Beck would emphasize that these costs are provided as estimates only, and that specific scopes of work and budgets will need to be developed in order to provide more exact cost estimates. Furthermore, these cost estimates could change based on further direction provided by the Virginia Department of Environmental Quality concerning regulatory issues. Section 5 provides further detail concerning the regulatory and legal tasks. Section 2.5 details the hiring of initial staff.

Table 1-6
Regional Entity Start-up Costs

Task	Estimated Cost Range
Regulatory and Legal	
Transition Plan	$20,000 - $25,000
Proof of Concept Technical Proposal	$50,000 - $75,000
Petition Virginia DEQ for Designation as a Solid Waste Region	$5,000 - $10,000
Preparation of a Regional Solid Waste Management Plan	$35,000 - $100,000+
Apply for permit amendments	$20,000 - $30,000
Legally establish the Regional Entity and address related legal issues	To Be Determined
Subtotal	$130,000 - $240,000+
Hire initial staff	$155,000 - $170,000

R. W. Beck would recommend that the participating communities fund start-up costs in the same manner used to fund the feasibility analyses completed to date for this project. This approach has involved each participating community funding a pro rata portion of all costs incurred.

1.4.2 Regional Entity Operating Budget for FY 2008

With significant input from the participating communities, R. W. Beck developed an operating budget for the Regional Entity. The budget is for fiscal year 2008, assuming

that the Regional Entity will begin landfill operations approximately July 1, 2007. If operations do not begin at this time, future adjustments could be made when there is a better understanding of timing. Budget costs have been inflated by 2.5 percent annually to reflect cost increases that may occur over the next two years. Appendix A provides detailed schedules of the operating budget.

Section 4.3 summarizes the annual budget based on the information presented in Sections 4.1 and 4.2. Table 1-7 contains the FY 2008 budget for the Regional Entity

Table 1-7
Regional Entity Budget

Budget Category	FY 2008 Budget
Personnel	$948,407
Active Landfill O&M	$1,348,158
Inactive Landfill O&M	$99,458
Equipment	$568,596
Capital	$2,511,616
Financial Assurance	$372,775
Reserve Funds	$372,819
Potential Environmental Remediation	$50,000
Total	$6,271,829
Total Tons Accepted	262,264
Cost per Ton	$23.91

1.4.3 Preliminary Financial Summary

The following are the FY 2008 cost per ton estimates from Regional Solid Waste Management Analysis that R. W. Beck completed for Region 2000 in 2005. These costs per ton are based on the status quo operation and include tonnage accepted from BFI.

- City of Lynchburg: $24.64
- Campbell County: $33.36
- Amherst County: $41.92

Among the landfill communities, Campbell County and Amherst County will benefit the most from the lower cost per ton of the regional landfill. While the City of Lynchburg will also benefit from a lower cost per ton, the City also receives a significant up-front benefit from the transition of its assets to the Regional Entity.

The non-landfill communities, Nelson County and the City of Bedford, would also realize significant cost savings compared to their current transfer and disposal costs. Costs for FY 2008 for Nelson County would decrease from $59.25 per ton to $46.95 per ton, and from $92.13 per ton to $85.77 per ton for the City of Bedford.[4]

Based on the work completed throughout this report, R. W. Beck is able to develop preliminary estimates of the financial impact for each community that would participate in the regional approach.[5] Based on this analysis, all of the participating communities will achieve meaningful cost savings with the regional approach, as compared to their current programs. Nelson County and the City of Bedford would reduce their costs based on shorter hauling distances and lower tipping fees. The three landfill communities – Amherst County, Campbell County and the City of Lynchburg – would generate and share excess revenue achieved from more cost effective operations. The following table summarizes the estimated financial benefits by community.

Table 1-8
Estimated Financial Benefit by Community

Community	Annual Value (FY 2008)	Total Net Present Value (FY 2008 – 2024)
Amherst County	$361,971	$4,790,501
Campbell County	$852,047	$11,828,869
Nelson County	$167,319	$2,345,292
City of Bedford	$25,619	$370,952
City of Lynchburg	$643,112	$8,736,716

Notes
1. Amounts the landfill communities (Amherst County, Campbell County and the City of Lynchburg) are based on projected excess revenue and allocated by community relative to the projected amount of remaining airspace when the Regional Entity would begin operations. Amounts for Amherst and Campbell Counties are net of the incremental transportation costs. No incremental transportation costs were assumed for Lynchburg. The savings listed for these three communities are from excess revenue and do not include the additional benefit from a less expensive disposal rate.
2. Amounts for the City of Bedford and Nelson County reflect the projected decrease in tipping fees and reduced transportation costs.

1.4.4 Other Financial Issues

Section 4.4 provides guidance concerning how the Regional Entity and the participating communities should address other financial issues that may need to be addressed in the future. This section was developed based on discussion with representatives from each participating community, and represents a consensus from those discussions. Other financial issues discussed in the section include:

- Sharing the gas payment right at the Lynchburg landfill;

[4] The status quo costs are based on the 2005 report and the costs as a part of the regional system are based on updating the 2005 report with the revised cost per ton amount developed in this report. Costs for Nelson County and the City of Bedford are higher than for the three landfill communities because of the transportation expenses, which include the need to long haul waste using transfer trailers.
[5] The financial analysis assumes that all communities and BFI would participate in the regional system in the future as they have in the past.

- Activities at closed portions of inactive landfills;
- Excess revenue or short-term deficits;
- Payments for disposal;
- Establishing the disposal rate;
- Participation by additional communities; and
- Future use of reserve funds.

1.5 Section 5 - Regulatory Analysis

Section 5 evaluates regulatory issues associated with how to implement the joint use of existing facilities in a regional approach. This analysis is based on R. W. Beck's research, as well as multiple meetings and discussions between the Virginia Department of Environmental Quality (DEQ), the Council and participating communities. The purpose of this section is to summarize key regulatory issues and to describe the current understanding of regulatory actions that will be required in order for the regional approach to continue progressing. This section concludes with a discussion of legal steps that would need to be completed in order to establish the regional entity.

1.5.1 Regulatory Issue Overview

As a part of this project, there is a need to obtain a specific understanding of actions that will be required by the Virginia DEQ in order for the landfills to remain compliant with State of Virginia solid waste regulations – particularly those concerning the timing of landfill closure. This issue is addressed in the Virginia Solid Waste Management Regulations 9 VAC 20-80, Section 250 E.4. It states that closure of a "unit" is required to begin "no later than 30 days after the date on which the unit receives the known final receipt of wastes, or if the unit has remaining capacity and there is a reasonable likelihood that the unit will receive additional wastes, no later than one year after the most recent receipt of wastes."

Most importantly, this section goes on to state that, "extensions beyond the one-year deadline for beginning closure may be granted by the director if the owner or operator demonstrates that the unit has the capacity to receive additional wastes and the owner or operator has taken and will continue to take all steps necessary to prevent threats to human health and the environment from the unclosed unit."

This will be an issue for the Campbell and Amherst County landfills since these facilities will be inactive or dormant for a period since only one landfill will be actively accepting waste at the same time, beginning with the City of Lynchburg landfill. Since there will be a time period when the Campbell and Amherst County landfills are not actively accepting waste, decisions will need to be made concerning whether these landfills will need to temporarily "close" even though they will accept waste in the future.

1.5.2 Proposed Regulatory Approach Concepts

The Council and participating communities are specifically requesting the use of an approach that would involve an extension beyond the one-year deadline from the DEQ for beginning closure of the Amherst and Campbell County landfills. In making this request, the Council emphasizes that all steps necessary to prevent threats to human health and the environment from the unclosed unit will be taken.

The two approaches include a soil-based approach and a synthetic cap approach.

Soil-based Approach

The Council initially proposed placing a soil cover, consisting of a minimum of 12-inches of low permeability (on-site) soil, over the portions of the landfill that would receive waste in the future, including a vegetative cover (i.e., grass similar to the closed landfills). In addition, all required environmental and maintenance efforts (e.g., gas, groundwater, leachate, stormwater, erosion control) would continue.

While the cost estimate for this approach is lower than the cost estimate for the synthetic cap approach, the cost for the soil based approach could increase due to the level of regulatory review, which could involve multiple demonstrations, that DEQ may require in order for this approach to be approved.

Synthetic Cap Approach

As an alternative to the soil-based approach, DEQ suggested that the Council consider an approach that would rely on a synthetic cap. This approach would still be considered a variance, and may include the following details:

- 5 ounce per square yard (oz/sy) woven FML (flexible membrane liner placed on top of 12 inches of non-engineered soil)
- FML panels should overlap side to side and down slope; while overlaps may be seamed with duct tape, they do not need to be welded
- The FML should be anchored with sand bags or tires to protect from wind uplift
- Gas would still need to be managed to prevent buildup of gas pressure beneath the FML
- Increased runoff from the FML may require modifications to storm water control features, such as drainage ditches

The projected cost for the synthetic cap approach could vary depending on how long the synthetic membrane lasts at each facility. It is estimated that the FML may last three to five years, or longer, depending on the level of environmental impacts, such as wind, rain, etc., and the frequency of maintenance. The current cost estimate is based on installing a FML once at the Campbell and Amherst County landfills. While the materials cost of the synthetic cap approach is likely to be higher than for the soil-based approach, DEQ may not require the level of engineering-based demonstrations for the synthetic cap approach, since they have approved similar approaches at other landfills.

Once the Council decides whether it would like to pursue the soil-based or synthetic cap approach, there will be a need to pursue a series of regulatory approvals. During discussions with the Council, DEQ has expressed a willingness to work with Region 2000 concerning the proposed regional approach. However, DEQ did emphasize that the requested approach is atypical, and will require careful consideration before approval. DEQ would like for a process to be developed as a model/pilot in case there would be an interest by other landfills to consider a similar approach in the future. Region 2000 will need to take a number of steps in order for DEQ to be able to approve the approach, including:

- Develop workgroup to establish schedule and requirements;
- Develop a transition plan;
- Develop proof of concept technical proposal; and
- Involvement the public in the process.

1.5.3 Further Regulatory Requirements

Based on multiple discussions between the DEQ and Region 2000, there is a preliminary understanding of the steps that would be required to undertake the regional approach that would involve the mothballing of the Campbell and Amherst County landfills.

Given the complex technical and regulatory issues involved, R. W. Beck would recommend that the Council seek assistance from qualified solid waste management consultants. For this reason, cost estimates for various consulting services have been included in the following discussions.

Regional Solid Waste Planning

Any potential approval of a variance for delaying closure would need to occur as part of a comprehensive effort to implement regional solid waste management. The first step is to petition the DEQ for designation of the participating communities as a region for solid waste management and planning purposes. The next step would involve development of a regional solid waste management plan.

- Petition Virginia DEQ for Designation as a Solid Waste Region
- Preparation of a Regional Solid Waste Management Plan
    - Demonstrate a commitment to recycling and other diversion efforts (e.g., household hazardous waste, brush, white goods)
    - Explain how cost savings from more efficient landfill operations would enhance opportunities to optimize integrated solid waste (e.g., redirect funds to recycling programs)
    - Detail how disposal needs will be addressed on a 20 year planning horizon, which would address disposal needs after all three existing landfills would reach capacity

- Providing the public with the opportunity to provide comments will be an important step throughout this process.

R. W. Beck would emphasize that work product from this report, as well as the previous Phase I report, can serve as a basis for certain sections of the regional plan. Cost estimates for a regional solid waste management plan can vary widely based on factors such as the types of issues to be included (disposal, collection recycling, etc.) level of detail to be addressed and number of project and public meetings. Based on this wide range, costs for regional plans can range from $35,000 to more than $100,000.

1.5.4 Permit Amendments

DEQ stated that permit amendments would be required for each of the three landfills. Issues that would need to be addressed could include but not be limited to the following:

- Change in ownership or operational control
- Equipment upgrade or replacement
- Changes to interim compliance dates
- Changes to final compliance dates
- Changes in procedures to the Landfill Operating Plan
- Management of different waste
- Increase in average daily volume

A major permit amendment will be required to address material and substantial alterations to each permitted facility as a result of operating each landfill as part of a regional solid waste system.

It has been estimated that the cost to prepare the amendments would be in the range of $20,000 to $30,000. The total cost would depend on subsequent requests by DEQ for additional research, demonstrations and/or submittals. Furthermore, this cost estimate is provided only for planning purposes, and the actual amount required could change based on direction from the DEQ.

1.5.5 Legally Establish the Regional Entity and Address Related Legal Issues

There will be a need to resolve various legal issues prior to the establishment of the Regional Entity. Examples of legal issues to be addressed could include but not be limited to:

- Execution of a memorandum of understanding between the participating communities to formally commit them to this process.
- Legal structure of the Regional Entity (e.g. part of the Region 2000 Partnership, regional authority, etc.).

- Evaluate what mechanisms will be required to hold the landfill communities legally responsible for future costs associated with the closed landfill sections of portions of the landfills that have already received waste.[6]
- Establish the mechanism to ensure that adequate financial assurance is provided for the landfills that may not be able to fund the current closure and post-closure liability.

While the legal issues to be addressed may be relatively straight forward, due to the need for coordination between the participating communities and the potential need for public involvement, this task may require one year. This time frame was based on discussions with multiple Virginia law firms. Cost estimates for this task would need to be provided by law firms that have experience in this field as part of a formal procurement.

1.6 Key Findings, Recommendations and Next Steps

The following summarizes the key findings, recommendations and next steps associated with the development of a regional solid waste entity. This report provides detailed analysis and evaluations of how to operate and manage a regional solid waste management entity. The Council and participating communities should specifically use this report to guide further actions concerning the development of a Regional Entity.

1.6.1 Operations

1. The Regional Entity and participating communities should use Section 2 as a guidance concerning how the Regional Entity should be organized and operated in the future.
2. This section should also be used as a reference to guide who should be responsible for various types of operational expenses that may be incurred among the three landfills.
3. There may also be additional operational benefits associated with the establishment of a regional Entity for each of the participating communities. These would focus on the opportunity to coordinate other solid waste management efforts such as collection, citizens' convenience centers, planning, recycling, household hazardous waste and wood waste processing. These important issues are discussed in detail in Section 8 of the April 2005 report.

[6] When the Regional Entity is established, it will become the official permit holder and owner of the landfills. Because DEQ has stated they will not "split" permits between active and closed portions, there is a need to develop the legal documents that will hold the landfill communities legally responsible for future costs associated with the closed landfills of portions of the landfills that have already received waste.

1.6.2 Financial Inventory

1. Section 3 applies a consistent and independent methodology regarding how the three landfill communities should be compensated for the assets and liabilities that they would contribute to the Regional Entity. This section also details the specific amounts that each community should receive or pay to the Regional Entity.
2. The values used for this inventory are based on a Regional Entity start date of July 1, 2007. If the date occurs before or after this time, there would be a need to update the values using the same methodology.
3. Based on the information presented in Table 3-7, the City of Lynchburg and Amherst County should expect a net benefit of $1.71 million and $363,848, respectively, while Campbell County will have to contribute an additional $29,908. Lynchburg has the largest net asset value primarily due to the funding of its financial assurance liability. Since Campbell and Amherst have chosen to use the local government financial test in the past, it has not funded its liability. Although Campbell County will receive no cash payment for its assets, by contributing $29,908 they will be able to fully fund their financial assurance liability.

1.6.3 Financial Analysis

1. Section 4 provides an understanding of the start-up and annual operating budget.
2. R. W. Beck would recommend that the participating communities fund start-up costs in the same manner used to fund the feasibility analyses completed to date for this project. This approach has involved each participating community funding a pro rata portion of all costs incurred.
3. Based on analysis included in Section 4, R. W. Beck has estimated that it would cost $23.91 per ton in FY 2008, which is the estimated date of when the Regional Entity would begin operations. This cost per ton under a regional approach is lower than any of the costs for the participating communities under the status quo.
4. From a cost perspective, it is in the best interest of all five communities to participate in the development and operation of a Regional Entity, as discussed in Table 1-8.

1.6.4 Regulatory and Legal Issues

1. As discussed in Section 5, there are still several important regulatory issues that need to be addressed in order to establish the Regional Entity under the approach where one landfill would be operated at a single time.
2. Based on a suggestion by DEQ staff, the Council, participating communities and DEQ agreed in principal to form a workgroup that would facilitate review

of the technical merit of the concept as it evolves. An objective of this workgroup would include developing a schedule and clarifying specific requirements to complete this regulatory process.

3. R. W. Beck would expect that a project schedule could only be developed based on this type of discussion with DEQ since they will need to approve many of the steps discussed in this section. On a preliminary basis, 24 to 36 months may be required to take the steps necessary to establish the Regional Entity.
4. The Council and participating communities will need to decide whether to pursue a soil-based approach and a synthetic cap approach in requesting the extension beyond the one-year deadline from the DEQ for beginning closure of the Amherst and Campbell County landfills. Based on this decision, the Council and participating communities should continue moving forward to establish the Regional Entity.
5. While the materials cost of the synthetic cap approach is likely to be higher than for the soil-based approach, DEQ may not require the level of engineering-based demonstrations for the synthetic cap approach, since they have approved similar approaches at other landfills. Therefore, it may be less time consuming and require lower engineering/consulting fees to implement the synthetic cap approach.

1.7 Conclusion

During the past two plus years, the Council and participating communities have invested significant staff and financial resources examining the feasibility of a regional approach to solid waste management. Based on the analysis completed to date, the regional disposal concept is a well founded and worthwhile endeavor. For example, all of the participating communities will achieve meaningful cost savings with the regional approach, as compared to their current programs.

In order continue moving from concept to implementation, there is still more work to be done. Completed and future efforts should be worthwhile given the financial and environmental benefits to be gained. At this time, all of the participating communities should formally decide whether they would like to continue with this effort. Execution of a memorandum of understanding between the participating communities would formally commit each community to this process.

In the future, solid waste issues – ranging from disposal to collection to recycling – will become more challenging due factors such as rising costs and increased regulations. By working together, the participating communities will be able to address these issues easier over the long-term. To make this concept a reality, each of the participating communities will also need to commit the necessary resources.

Section 2
Regional Solid Waste Entity Operations Review

2.1 Introduction

There are three landfills with significant remaining capacity in Region 2000 (e.g. Amherst County, Campbell County and City of Lynchburg). Operating as a Regional Entity, only one of the three landfills would accept waste for disposal at a time. The participating communities would send all of their solid waste to one of these three landfills. The other two landfills would become inactive, or "mothballed," until it is used in sequence when the current regional landfill reaches capacity. Although the other two landfills would not accept waste for disposal, operations would continue to occur from a regulatory perspective (i.e., environmental monitoring, post-closure of closed landfills, site maintenance, etc.).

Based on preliminary discussions with staff from the Virginia Department of Environmental Quality (DEQ), this approach would be allowed from a regulatory perspective, as long as steps are taken "to prevent threats to human health and the environment." Refer to Section 5 of this report which discusses efforts that must be undertaken by each participating community and the Regional Entity in order to comply with the DEQ's interpretation of the regulation

The purpose of this section is to evaluate how to implement the joint use of existing solid waste disposal facilities in a regional approach. This analysis focuses on the operational needs and costs associated with (1) the first facility that would be used as the regional landfill and (2) the other two landfills that will be used sequentially in the future as the regional landfill. The evaluation assumes that initially the regional landfill will dispose of approximately 900 tons of waste per operating day.[1]

This section includes an evaluation of the optimal operational needs for the first facility that would be used as the regional landfill. This analysis focuses on the following types of operational issues:

- Overview of the Regional Entity operations:
- Staffing levels by position

[1] The quantity of 900 tons per day assumes that waste from BFI (also known as Allied Waste) continues to be disposed of within Region 2000. It is important to mention that BFI is considering developing and operating a transfer station in Appomattox County, which would likely mean that BFI's waste would go directly to this transfer station instead of existing facilities in Region 2000. Although there could be some uncertainty concerning the status of BFI waste, the participating communities and R. W. Beck decided to develop this operational analysis based on the assumption that BFI would continue to use the Region 2000 landfill since BFI has not further pursued facility development and the recent fuel price increases reduce the feasibility of BFI long hauling waste

- Equipment needs
- Hours/days of operation
- Site development
- Scale house and scales
- Closure and post closure
- Support systems (e.g. electronic software and hardware)
- Administration (e.g. billing, purchasing, legal, etc.)

Concerning the other two landfills, this analysis focuses on (1) determining the operational needs to allow residents to use these facilities as citizens' convenience stations as soon as the Regional Entity begins operations and (2) evaluating what future improvements, if any, will be required when these facilities serve as the regional landfill.

An annual budget estimate has also been developed in Section 4 to estimate the costs described in this section of the report.

2.2 Overview of Regional Entity Operations

The purpose of the Regional Entity will be to provide each of the participating communities with landfill disposal for all of the residentially and commercially generated garbage in an environmentally responsible manner. The Regional Entity will manage the active landfill and site and provide services related to the management of the inactive landfills. This section describes the operations that will be the responsibility of the Regional Entity, which are currently provided independently by each of the participating communities.

2.2.1 Administration

The administrative function will be to provide the overall management and policy direction for the Regional Entity. Administration functions include:

- interaction with the participating communities;
- human resources;
- financial;
- customer service;
- engineering and permitting;
- recordkeeping;
- development of a regional plan, including compliance with state-mandated recycling goals;
- meet federal, state and local rules and regulations;
- contracting with suppliers and contractors; and

- project management.

The administration will also support development of the organization and its staff and measurement of the utility's performance.

2.2.2 Operation of the Active Landfill

The Regional Entity will be responsible for the management of all landfill related operations associated with disposal activities at the landfill serving as the regional facility. These operations include:

- weighing inbound and outbound customers delivering waste to the facility;
- waste screening for prohibited materials;
- development of borrow areas as sources for daily and intermediate cover;
- hauling cover material from the borrow areas to the active landfill or stockpile;
- placing and compacting waste;
- spreading and compacting daily and intermediate cover material;
- management of the working face;
- servicing the residential convenience center;
- management of special waste and household hazardous waste collection areas;
- scheduling of, and assigning, staff to specific operations activities; and
- keeping the equipment in good operating condition.

2.2.3 Site and Grounds Maintenance

The Regional Entity will also be responsible for site and grounds maintenance for the active and inactive landfills including support facility areas and within site buffers. Site and grounds maintenance activities include:

- collection of windblown litter;
- installation and maintenance of erosion control features;
- maintaining existing access roads in a safe and passable condition;
- maintaining stormwater and leachate facilities;
- maintaining appropriate vegetation, including filling and reseeding as necessary; and
- management and repair of site access controls, such as fences, street lights and gates.

In addition, there may be a need to perform site and grounds maintenance activities outside the property boundary. For example, collection of litter that has migrated off site is the responsibility of the landfill operator as well as litter on roads adjacent to the site.

2.2.4 Environmental Monitoring and Remediation

The Regional Entity will perform all environmental monitoring and reporting requirements associated with the active and inactive landfills as required by regulation and permit condition. Environmental monitoring and control systems are installed to address:

- the quality of groundwater;
- the occurrence of landfill gas migration;
- air quality; and
- the management of stormwater and surface water discharges.

The Regional Entity will also be responsible for future remediation actions ordered by VDEQ associated with the active and inactive landfills that are associated with waste landfilled by the Regional Entity.

Since the Regional Entity will already have staff at each site operating the active and maintaining the inactive landfills, the Regional Entity should also operate the environmental remediation facilities for the closed landfills. Currently, Campbell County is installing a groundwater treatment system and the City of Lynchburg is modifying landfill gas wells to control migration. Each community however should continue to be financially responsible for the cost of these activities. We recommend that each community reimburse the Regional Entity on an annual basis. For the first year of operation, the annual payment should be based on an estimate of the operating costs. Subsequent years should be based on the cost of operation from the previous year. Each community will also be responsible for any modifications to the facilities, including capital improvements, necessary to comply with future regulatory orders and agreements.

2.2.5 Future Cell Development and Closure

The Regional Entity will be responsible for the timely development of all future landfill phases/cells to provide continuous disposal capacity for the participating communities. Cell development includes planning, permitting, engineering and construction. The Regional Entity will obtain the services of, and manage the work performed by, qualified consultants and contractors as necessary (and as required by State of Virginia solid waste regulations). The Regional Entity will be responsible for the cost of all future cell development activities. Similarly, the Regional Entity will be responsible for the closure of all currently active landfill areas. However, each participating community (with an active landfill) will be responsible for the portion of the closure costs based on the percentage of the landfill capacity that has been developed and used prior to the Regional Entity being formed. The Regional Entity will also be responsible for the cost of mothballing the Campbell and Amherst County landfills. This issue is further addressed in Section 4.

2.2.6 Post-Closure Care

The Regional Entity will be responsible for performing post-closure care activities in accordance with the VDEQ approved plans for each currently active landfill that will also serve as the regional disposal facility. The Regional Entity will be financially responsible for post-closure care of the City of Lynchburg active landfill, the Campbell County Phase III and future Phase IV landfills, and the entire Amherst County landfill. However, each participating community (with an active landfill) will be responsible for the portion of the post-closure care costs based on the percentage of the landfill that has been developed and used. This issue is further addressed in Section 3.4.2.

Since the Regional Entity will already have operations staff on site operating the active and maintaining the mothballed landfills, the Regional Entity should also be responsible for performing post-closure care associated with landfills that have already closed (i.e., landfills that are already operating in post-closure). The City of Lynchburg and Campbell County disposal sites include closed landfills. As part of development of the Regional Entity, the participating communities with closed landfills shall compensate the Regional Entity for these future operations. Each participating community shall compensate the Regional Entity assuming that post-closure care will occur for 30 years as of the date of the last receipt of waste. For post-closure care operations and maintenance activities that arise and are not included in each facility's post-closure plan, each participating community shall reimburse the Regional Entity for performing these activities since they cannot be foreseen or estimated.

2.2.7 Efforts at the Inactive Landfills

While the other two landfills will not actively accept waste while landfill operations occur at the active landfill, there will be a need to conduct certain activities, which primarily include maintenance of the grounds and monitoring equipment, as well as the actual monitoring of environmental control systems. In addition, the Regional Entity will hold weekly (e.g. Saturday) collection events for materials such as tires, brush and bulk items (e.g. appliances). Each participating community will be individually responsible for hauling or paying the cost associated with its own residentially generated (e.g., from collection vehicles or convenience centers) waste to the landfill. This issue is further addressed in Section 2.7.

2.3 Site Development

This section discusses future site development associated with the three active landfills. R. W. Beck estimated the remaining capacity and site life for each active landfill. In addition, we estimated the life of the active landfills when operated as part of a regional disposal system.

The site life estimates for the three active landfills, when operated as part of the regional system, have been updated since completion of the "Regional Solid Waste

Management Analysis" in April 2005 to reflect R. W. Beck's better understanding of the operations at each disposal facility. The site life estimates are based on each facility's remaining airspace as of January 2005 and airspace utilization factor (AUF) (waste density and cover soil usage). To calculate remaining capacity, R. W. Beck relied on data provided by each landfill, which was in the form of either an AUF or a combination of waste density and cover soil usage.

2.3.1 Remaining Landfill Capacity and Site Life

2.3.1.1 Lynchburg Landfill

The City of Lynchburg is currently operating in Phase III of its active four-phase landfill. The City is in the process of excavating material for daily and intermediate cover from the final permitted phase. The City currently anticipates final design and construction of Phase IV to occur during fiscal year 2008. Table 2-1 summarizes the remaining capacity of each phase of the active landfill as of January 2005.

Table 2-1
City of Lynchburg Landfill – Remaining Capacity at January 2005

Phase	Design Capacity (cubic yards)	Percent Capacity Remaining	Remaining Capacity (cubic yards)
I	951,800	28.9%	275,392
II	1,022,300	22.0%	224,424
III	1,742,100	73.7%	1,284,696
IV	644,700	100.0%	644,700
TOTAL	4,360,900		2,429,212

Notes:
Source: City of Lynchburg, Survey Status Report, January 5, 2005.

Based on the current disposal rate and a reported airspace utilization factor (AUF) of 1,650 pounds per cubic yard, R. W. Beck estimates the City of Lynchburg landfill will reach capacity in December 2016.

2.3.1.2 Campbell County Landfill

Campbell County began placing waste in Cell 5 of Phase III in October 2004. Phase III includes two additional cells – Cells 6 and 7 (not developed). The County has also permitted a five-cell Phase IV landfill. Table 2-2 summarizes the remaining landfill capacity of the Campbell County landfill as of January 1, 2005.

Table 2-2
Campbell County Landfill – Remaining Capacity at January 2005

Phase	Design Capacity (cubic yards)	Percent Capacity Remaining	Remaining Capacity (cubic yards)
III-5	413,036	93.6%	386,438
III-6	405,729	100%	405,729
III-7	643,318	100%	643,318
IV	1,525,828	100%	1,525,828
TOTAL	2,987,911		2,961,313

Notes:
Source: Campbell County, data files.
Cells 1-4 of Phase III are assumed to be at capacity.

Based on the current disposal rate, a reported waste density of 1,273 pounds per cubic yard and a cover soil usage of five percent of the waste volume, R. W. Beck estimates that Phase III of the Campbell County landfill will reach final capacity in November 2022. If Campbell County develops Phase IV of the landfill, R. W. Beck estimates the site will reach capacity in January 2041.

2.3.1.3 Amherst County Landfill

Amherst County is currently operating in Phases 3 and 4 of Trench A. The County has also permitted the development of four additional trenches, Trenches B, C, D and E. Table 2-3 summarizes the remaining capacity of the Amherst County landfill as of January 11, 2005.

Table 2-3
Amherst County Landfill – Remaining Capacity at January 2005

Phase	Design Capacity (cubic yards)	Percent Capacity Remaining	Remaining Capacity (cubic yards)
A-3 & 4	450,000	83.2%	374,249
A-5	520,500	100%	520,500
B	47,000	100%	47,000
C	183,000	100%	183,000
D & E	145,000	100%	145,000
TOTAL	1,345,500		1,269,749

Notes:
1. Source: Amherst County, data files.
2. Phases 1-3 of Trench A are assumed to be at capacity; however, the County reports that some additional capacity is available. VDEQ required the County to install a partial cap on the side slopes of Phase 1.

Based on the current rate of disposal, an estimated waste density of 1,200 pounds per cubic yard, and a cover soil usage of 20 percent, R. W. Beck estimates that Trench A will reach capacity in August 2019. If the Amherst County landfill is fully developed

through Trench E, R. W. Beck estimates that the facility will reach final capacity in July 2025.

2.3.2 Life of Regionally Operated Landfills

Assuming that the Regional Entity would not begin operation until July 2007, a portion of the remaining capacity at each landfill will already be consumed by each jurisdiction in continuing its current operation. Table 2-4 estimates the airspace consumed at each facility from January 2005 through June 30, 2007 as well as the remaining landfill capacity available to the Regional Entity. The estimates are based on the waste tonnage analysis performed during Phase 1 for each participating community.

Table 2-4
Estimated Regional Entity Landfill Capacity at July 2007, in cubic yards

Landfill	Remaining Capacity as of Jan. 1, 2005	Projected Airspace Consumption	Estimated Capacity as of July 1, 2007
Lynchburg	2,429,212	501,981	1,927,231
Campbell	2,961,313	196,790	2,764,523
Amherst	1,269,749	150,827	1,118,922
TOTAL	6,660,274	849,598	5,810,676

Note:

1. Projected Airspace Consumption represents the estimated airspace consumed by each facility (prior to operation by the Regional Entity) for two years and six months from January 1, 2005 through June 30, 2007.
2. Projected Airspace Consumption assumes continued disposal of BFI waste.

Based on the estimated capacity remaining as of July 1, 2007, a site life analysis was performed to determine the approximate life of each landfill operating as the regional facility. The analysis also assumed that the Regional Entity would accept waste from the City of Bedford and Nelson County beginning July 2007.

The site life analysis assumes that each landfill, when operated by the Regional Entity, will perform similarly. For example, since each active landfill will dispose of approximately the same tonnage of waste annually, a similar amount of daily cover material will be used. In addition, the same equipment will be employed at each active landfill thus achieving similar compaction rates.

For the purposes of the site life analysis, R. W. Beck assumed that each regionally operated landfill will achieve an AUF similar to the City of Lynchburg's current operation. The City currently achieves an AUF of about 1,650 pounds per cubic yard based on the amount of waste disposed, including sludge from the City's wastewater treatment plant, and soil cover used. However, based on the increase in waste volume from the other participating communities, we estimate that the AUF will decrease slightly to 1,550 pounds per cubic yard. The City is currently evaluating land application of sludge as an alternative to landfill disposal. If the sludge is not disposed, we estimate that the AUF would decrease to about 1,300 pounds per cubic yard.

Table 2-5 indicates the approximate life of each landfill in years and the predicted date when each facility will begin operation as the regional landfill. The site life analysis evaluated the life of the landfills with and without BFI waste.

Table 2-5
Regional Entity Site Life Summary with a Start Date of July 2007

	With BFI Waste		Without BFI Waste	
Landfill	Life (in years)	Open Date	Life (in years)	Open Date
Lynchburg	5.6	July 2007	8.6	July 2007
Campbell	8.0	February 2013	11.1	February 2016
Amherst	3.2	February 2021	4.5	March 2027
TOTAL	16.8		24.2	

Note: Assumes an AUF of 1,550 pounds per cubic yard for all landfills

The site life of each landfill, when operated as part of the regional system, is similar to R. W. Beck's Phase I report. The analysis completed during Phase I estimated that the site life, including disposal of BFI waste, would be approximately 20 years (and 27 years without BFI waste) starting in January 2005.

The site life analysis results above reflect the use of modified site specific information related to waste compaction densities, cover soil usage, and types of material accepted (i.e., WWTP sludge). It assumes that when each landfill is operated by the Regional Entity (rather than three independent operators operating under different conditions), operations at each site will be more similar. This translates into a longer site life based on higher AUFs for all three landfills combined compared to current operations at each facility. R. W. Beck estimates that the three landfills will provide the Regional Entity with disposal capacity starting in July 2007 for about 17 years including BFI waste and 24 years without BFI waste. Along these lines, R. W. Beck would mention that the estimates provided in this section will likely change depending on factors such as operations, tonnage flow and types of materials received. R. W. Beck would recommend that the Regional Entity update the remaining capacity projections annually.

2.3.3 Sequencing of Landfills and Timing of New Cell Development

Although the City of Lynchburg landfill does not have the greatest operational capacity remaining, it is most prepared to operate as the regional facility. In order to accept significant increases in waste quantities, the Campbell and Amherst facilities would require several capital improvements (see Section 2.10).

Once the Lynchburg landfill reaches capacity, all waste would go to the landfill in either Campbell or Amherst County. The Regional Entity will need to evaluate both the Campbell and Amherst facilities to determine which facility is best positioned to operate after the Lynchburg landfill closes. The major consideration is the timing and

cost of capital improvements required to prepare the facility to operate as the regional landfill.

The Regional Entity will also need to evaluate whether the cost of capital improvements to prepare a facility to operate as the regional landfill is more than what can be supported by the utility user fees. If this is the case, the Regional Entity may consider final closure of a site prematurely (i.e., prior to the development of all permitted phases/cells). For example, the cost of improvements at the Amherst County landfill, including major off-site road improvements, may not be worth the value of the landfill's remaining capacity.[2] Refer to Section 2.10.2 for further detail. The Regional Entity may find it more valuable to use those funds and resources for acquiring long-term disposal capacity at one of the other sites, or a new regional landfill site.

In order to ensure that landfill space does not expire before a facility, or new cell, is ready to operate, the Regional Entity will want to plan and implement capital improvements and cell development in a timely manner. New cells should be ready at a minimum six months, recommended one year, before the developed capacity is anticipated to expire. The Regional Entity should re-evaluate the remaining capacity on an annual basis.

2.4 Facility Operating Days/Hours

2.4.1 Current Operations

Table 2-6 indicates the hours and days that each facility currently operates.

Table 2-6
Facility Operating Hours and Days – Current

Landfill	Operating Hours	Operating Days
City of Lynchburg	7:00 a.m. – 4:00 p.m.	Monday – Saturday
Campbell County	7:00 a.m. – 4:00 p.m.	Monday – Saturday
Amherst County	8:00 a.m. – 4:00 p.m.	Monday – Friday
	8:00 a.m. – 12:00 p.m.	Saturday

Each facility is closed on four major holidays: New Years, Independence Day, Thanksgiving and Christmas. In addition, the Campbell County landfill is closed on Martin Luther King Day and President's Day.

[2] Research will also be completed to evaluate opportunities for other governmental entities (e.g. the Virginia Department of Transportation and Industrial Development Authority) to share in the cost of any road improvements.

2.4.2 Proposed Operations

Customers of each facility are familiar with the current hours and days of operation. Therefore, R. W. Beck recommends, at a minimum, maintaining the current operating schedule – 7:00 a.m. to 4:00 p.m. Monday through Saturday at the Regional Landfill. This represents an extended schedule for only the Amherst County landfill.

Based on a review of historical data from the three landfills, it appears that operating hours from 7:00 a.m. to 4:00 p.m. Monday through Saturday should provide customers with sufficient access to the landfill. Also, the facility should be capable of accommodating the increase in waste tonnage during the current operating hours with proper staffing and equipment.

R. W. Beck also recommends that the regional landfill be closed on the four common holidays that each facility is currently closed: New Years, Independence Day, Thanksgiving and Christmas. The landfill should be open on Martin Luther King Day and President's Day.

2.5 Staffing

2.5.1 Current Landfill Staffing

Tables 2-7 through 2-9 summarize the current staffing at the City of Lynchburg, Campbell County and Amherst County landfills, respectively.

Table 2-7
City of Lynchburg Landfill Staff – Current

Position Title	Staff Positions	Allocation of Staff	
		Landfill	Non-LF
Waste Management Director	1	0.50	0.50
Civil Engineer	1	0.70	0.30
Waste Facility Operations Coordinator	1	0.90	0.10
Financial Coordinator	1	0.50	0.50
Administrative Associate	3	2.80	0.20
Landfill Cashier	1	1.00	0.00
Public Works Associate	13	7.80	5.20
Master Technician	2	0.80	1.20
TOTAL	23	15.00	8.00

The City of Lynchburg currently has 15 FTE dedicated to the landfill operations. The other eight FTE support other Waste Management Division functions such as residential waste collection. For example, of the 13 Public Works Associates (PWA),

two perform brush and bulk collection activities and three more support the City's recycling program part-time.

Table 2-8
Campbell County Landfill Staff – Current

Position Title	Staff Positions	Allocation of Staff	
		Landfill	Non-LF
Deputy Director	1	0.85	0.15
Office Manager	1	0.85	0.15
Administrative II	2	1.70	0.30
Equipment Operator	6	4.25	1.75
TOTAL	10	7.65	2.35

Campbell County allocates 7.65 FTE for landfill operations. The other 2.35 FTE assist with other county operations such as the building and maintenance of parks and roads.

Table 2-9
Amherst County Landfill Staff – Current

Position Title	Staff Positions	Allocation of Staff	
		Landfill	Non-LF
Solid Waste Director	1	0.70	0.30
Account Clerk	1	0.75	0.25
Landfill Attendant	1	0.80	0.20
Scale House Attendant	1	1.00	0.00
TOTAL	4	3.25	0.75

Amherst County also provides a part-time scale attendant. Equipment operators and laborers are provided under contract. Two equipment operators and one laborer are on site each weekday; typically only two of these contract staff work on Saturday.

2.5.2 Proposed Staffing

Based on the anticipated tonnage to be received at the regional facility from each of the participating communities and the Regional Entity's other responsibilities at the active and inactive landfills, Table 2-10 identifies the proposed staff needed to operate the regional solid waste utility. Each FTE represents one 40-hour work shift. Staffing projections include a contingency to account for vacations, sick leave, training, and other absences.

Table 2-10
Regional Solid Waste Utility Staff

Position	FTE
Management	
Director	1
Environmental Compliance and Engineering Manager	1
Business and Human Resources Manager	1
Administrative Assistant	3
Subtotal	6
Operations	
Operations Supervisor	2
Scale House Attendant	2
Equipment Operator II	2
Equipment Operator I	4
Site Maintenance Worker	4
Mechanic	1
Subtotal	15
Total	21

The Regional Entity should evaluate the need for hiring part-time staff to ensure that all required operations are performed without the use of significant overtime.

2.5.3 Overview of Staff Positions and Responsibilities

Management staff for the utility will consist of the Director, Environmental Compliance Officer and Engineering Manager, Business and Human Resources Manager, and Administrative Assistants. The management staff will typically work five 8-hour shifts, Monday through Friday, but will be on-call as required. Although the existing administration staff for each facility is not dedicated to landfill operations 100 percent of the time, the administration staff of the Regional Entity will be a full time responsibility.

A brief description of the responsibilities of each position is provided below.

- **Director:** responsible for the overall management of the utility – overseeing the performance of the utility in meeting its responsibilities to the participating communities and customers.
- **Environmental Compliance and Engineering Manager:** responsible for ensuring compliance with permit conditions with respect to environmental monitoring and reporting and management of capital improvement projects and consultant contracts.
- **Business and Human Resources Manager:** responsible for utility accounting, including customer billing and collections, coordinate human resource functions

performed by another entity for the utility, and supervision of the Scale House Attendants.

- **Administrative Assistants:** responsible for supporting all other management staff, provide receptionist services, and serve as back-up staff for the scale house.

Operations staff consists of the Operations Supervisors, Scale House Attendants and Equipment Operators. It is assumed that operations staff will work four 10-hour shifts. The proposed operations staff is designed to accommodate the needs at all three facilities. A brief description of the responsibilities of each position is provided below.

- **Operations Supervisors:** responsible for providing direction of all operations activities and supervision of Equipment Operators and Site Maintenance Workers; Supervisors should be capable of performing the duties of an equipment operator; Supervisors should obtain state landfill operator certification.

  Supervisors can typically manage about six employees effectively. R. W. Beck recommends staffing two Operations Supervisors for the ten Equipment Operators and Site Maintenance Workers, and one Mechanic. In addition, two Supervisors will be better able to manage the operations at all three facilities. However, one of the Supervisors should take the lead in scheduling staff and ensuring operations are being conducted efficiently while the other should perform functions of the Equipment Operators and Site Maintenance Workers to account for vacations and sick leave, and ensure that all necessary operations activities are addressed. The Supervisors schedules will be staggered such that two days a week, only one Supervisor will be present on site.

- **Scale House Attendants:** responsible for all landfill customer transactions and waste tracking data management. R. W. Beck recommends that two Scale House Attendants be available on site to efficiently process customers and minimize traffic queues during peak operating periods. With the anticipated traffic volume of residential customers on Saturdays, it is likely that two attendants will be necessary. The Regional Entity may evaluate staffing a second attendant, when necessary, with one of the Administrative Assistants or possibly cross-training Site Maintenance Workers or Equipment Operators. Cross-training employees to perform multiple functions will provide flexibility in meeting staffing needs. When two attendants are present, one will work the inbound scale while the other works the outbound scale.

- **Equipment Operator II:** lead operators capable of effectively operating all equipment. Typically, the Equipment Operator II will perform many different jobs each day. The Equipment Operator II should obtain or maintain state landfill operator certification. In addition, the Equipment Operator II should be capable of performing the responsibilities of an Operations Supervisor to account for vacations and sick leave, and as required to successfully manage the regional facilities and operations.

- **Equipment Operator I:** responsible for equipment operation; primarily at the active landfill. May perform duties of Site Maintenance Work, as required. As

necessary, depending on experience and qualifications, can fill in as Equipment Operator II as needed.

- **Site Maintenance Worker:** responsible for site and grounds maintenance at the active and inactive landfill sites. Site Maintenance Workers will also perform site inspections and support the Compliance Officer with environmental monitoring (for groundwater, surface water, air and landfill gas), assist in the operation and maintenance of the environmental control systems, and haul leachate. Site Maintenance Workers should be able to operate a variety of heavy equipment such as a dozer and loader, and should be capable of performing some of the duties of an Equipment Operator as needed.
- **Mechanic:** responsible for routine and preventative maintenance, as well as minor repairs, for all landfill equipment and vehicles. It is anticipated that one Mechanic will be able to perform the majority of equipment and vehicle maintenance activities; however, Equipment Operators and Site Maintenance Workers should be capable of performing minor equipment maintenance functions, such as oil changes, to support the Mechanic.

Table 2-11 identifies typical daily operations staff needed, based on the work to be performed. R. W. Beck would mention that on some days of the week, the number of staff would be fewer, For example, there would only be one supervisor at the site two days per week, as the supervisors would work on different days of the week (e.g. one would be Monday – Thursday, while the other would be Wednesday – Saturday).

Table 2-11
Typical Daily Operating Staff by Function

Function	FTE
Supervisor	1.5
Refuse Compactor	2
Track Loader	1
Dozer	0.25
Pan Scraper	0.25
Site Maintenance	2
Scale Attendant	2
Mechanic	1
Total	10

2.5.4 Staff Hiring Process

Currently there are approximately 26 FTE City and County employees dedicated to landfill operations at the three existing disposal sites. By consolidating operations, it is anticipated that 21 FTE will be required to run the new regional disposal utility. Staff currently employed at the existing disposal facilities should be considered first for staff positions with the Regional Entity. The Regional Entity should develop a fair hiring process to select staff.

It is likely that some employees of the existing disposal facilities will prefer to remain with the City or County. R. W. Beck recommends that these employees be considered for staff vacancies or new positions within the local government.

2.5.5 Contracting Regional Entity Staff to Local Governments

The City of Lynchburg currently provides staff to other City departments during adverse weather conditions, when the landfill is closed or operating at a minimum level, to perform other duties. For example, during snow events, operators plow snow from City streets and at the airport. The Regional Entity may consider developing an inter-governmental agreement to provide staff for a variety of services with the City and Counties. However, providing staff to assist the local governments would only occur when staff have the availability. The Regional Entity would be compensated for the amount of time worked by staff for the City/County.

The Regional Entity will need to address a few issues prior to establishing such an agreement with the City and Counties since the staff will not be working for the same organization. The Regional Entity will need to understand the liability issues with respect to employees working for other organizations. For example, employees of the Regional Entity may be operating City equipment or operating at a County facility. An employee may also be injured while on loan to the City or Counties, so the Regional Entity should understand the workers compensation issues as well.

2.5.6 Hire Initial Staff

In order to begin the planning and implementation of the Regional Entity, several of the staff members should be hired in advance of formal creation of the Regional Entity. R. W. Beck recommends the following positions be filled before operations start:

- Director
- Environmental Compliance and Engineering Manager
- Business and Human Resources Manager

The Director and Environmental Compliance and Engineering Manager should be appointed by the Regional Entity approximately one year before the Regional Entity takes control of the three landfills. These two individuals will be responsible for the planning and implementation of the Regional Entity, including but not limited to:

- Permitting
- Regulatory requirements for “mothballing” inactive landfills
- Facilitating the transition of assets
- Arranging any debt that may be required
- Development of Regional Plan

The Business and Human Resources Manager should be appointed three to six months before the Regional Entity begins operations. This will provide time for the hiring of

operations personnel as well as any training that may need to occur. This individual should also be responsible for establishing the accounting and reporting functions.

As discussed in Section 4, the salary and benefits for these individual should be paid for by the participating communities until the Regional Entity begins operations. Based on the estimated salaries and benefits, R. W. Beck estimated the cost to the communities.

Table 2-12
Cost of Initial Regional Entity Staff

Position	Time	Annual Salary [1]	Annual Benefits [2]	Total
Director	1 year	$60,411	$14,067	$74,478
Environmental Compliance and Engineering Manager	1 year	$55,158	$12,922	$68,080
Business and Human Resources Manager	3-6 months	$42,025	$10,058	$13,021 - $26,042
Total				$155,579 - $168,599

[1] Estimate of FY 2007 salary. Amounts are based on the mid-point of estimated salary ranges.

[2] Includes share of all benefits discussed in Section 4.2.1. These costs may increase given recent increases in pension and health insurance costs.

Based on the information presented in Table 2-12, the three communities would be responsible for approximately $155,000 to $170,000 in salary and benefits for the initial Regional Entity staff.

2.6 Equipment

2.6.1 Existing Facility Equipment

The equipment currently owned by and in operation at the three disposal sites is outlined in Table 2-13.

Table 2-13
City and County Owned Equipment

Equipment	City of Lynchburg	Campbell County	Amherst County
Compactor	3	1	1
Dozer	2		
Track Loader	1	2	
Wheel Loader	2		
Hoe		1	
Scraper	1	1	
Dump Truck	1		
Hook-lift Truck	3		
Open-top Bins	10	3	
Recycling Bins		4	
Street Flusher	1		
Fuel Truck	1		
Service Truck	1		
Forklift	1		
Tank Trailer		1	
Lowboy Trailer		1	
Flatbed Trailer	1		
Mad Vac Trailer		1	
Tractor w/ Bushhog	1	1	
Brush Chipper		1	
Riding Mower	1		
Personnel Vehicles	5	3	2
Communication Radios	21		3
Freon Remover	1		1

2.6.2 Proposed Equipment for Active Landfill Operations

Table 2-14 provides a list of equipment required to operate the regional landfill and perform other responsibilities of the Regional Entity. The equipment will be purchased from each of the jurisdictions. When multiple pieces of equipment are available to choose from, R. W. Beck recommends reviewing the equipment age, hours in operation, preventative maintenance history, and repair history. Table 2-14 also indicates the typical uses for each piece of equipment.

Table 2-14
Regional Entity Equipment for Landfill Operation

Equipment	Number	Typical Uses
Refuse Compactor	3	Waste placement and compaction
Dozer, D8	1	Ripping borrow area soil; spreading cover soils; pushing waste
Dozer, D3	1	Placement of intermediate cover soils; cover repair; site maintenance
Track Loader	1	Pushing waste at the working face; tipping floor maintenance
Rubber Wheel Loader	1	Loading special waste bins; cleanup at residential receiving area
Scraper	1	Hauling borrow materials for daily cover to working face and stockpile
Fuel Truck	1	Refueling equipment
Street Flusher	1	Site road maintenance
Dump Truck	1	Hauling debris from site maintenance activities
Hook-Lift Truck	1	Servicing of residential bins at the on-site customer convenience station[3]
Forklift	1	Unloading materials and supplies
Personnel Vehicles	6	Transporting operations staff on site and between sites
Equipment and Portable Radios	21	Communication between operating staff
Open-top bins	10	Allows residents and small haulers to dump loads at the drop-off site, and not at the working face

Typical operations will require two compactors. Each compactor should be used on a rotating basis such that each logs a similar number of hours in operation. The third compactor will be available as a spare in case of a breakdown. The third compactor may also be used during peak operating times to handle the quantity of waste without extending the work day.

2.6.3 Proposed Equipment for Other Operations

The Regional Entity will also require equipment to maintain the inactive landfills and perform site maintenance at the closed landfills. The equipment can be purchased from the jurisdictions which own the equipment. The following is a list of equipment that will be required.

- Riding mower

[3] When the Regional Entity needs to replace the hook-lift truck, there may be a need to consider retaining the existing unit as a spare.

- Tractor with bushhog mower
- Truck and tank trailer
- Lowboy trailer
- Flatbed trailer
- Freon remover

The small dozer will be used only about 25 percent of the time at the active landfill. Similar uses will be required at the inactive and closed landfills. The rubber tire loader can also be used at each of the disposal facilities to load white goods and tires in open top bins. This equipment can be rotated between disposal facilities using the lowboy trailer.

The truck and tank trailer will be used for hauling leachate from the Campbell and Amherst County landfills.

The Regional Entity will also require other tools such as shovels and chain saws. These tools may be available for purchase from each jurisdiction or can be purchased new.

2.6.4 Equipment Summary

The Regional Entity would purchase all equipment from the City and Counties and sell equipment that is not needed for operations of the active and inactive landfills. The Regional Entity should evaluate the age of existing equipment and determine whether the equipment value is worth more to keep, use and maintain or to sell. Table 2-15 summarizes the number of existing equipment and proposed equipment.

Table 2-15
Existing and Proposed Equipment

Equipment	Existing Equipment	Proposed Equipment
Compactor	5	3
Dozer	2	2
Track Loader	3	1
Wheel Loader	2	1
Hoe	1	0
Pan Scraper	2	1
Dump Truck	1	1
Hook-lift Truck	1	1
Open-top Bins	17	10
Street Flusher	1	1
Fuel Truck	1	1
Service Truck	1	0
Forklift	1	1
Tank Trailer	1	1
Lowboy Trailer	1	1
Flatbed Trailer	1	1
Mad Vac Trailer	1	1
Tractor w/ Bushhog	2	1
Brush Chipper	1	0
Riding Mower	1	1
Personnel Vehicles	9	6
Communication Radios	24	20
Freon Remover	2	1

2.6.5 Equipment Maintenance

Proposed staffing for the Regional Entity includes one full-time mechanic for equipment and vehicle maintenance in addition to training equipment operators and site maintenance workers to perform routine maintenance activities, such as oil changes. R. W. Beck recommends the Regional Entity contract with the City of Lynchburg, at least while operating the Lynchburg landfill, for additional equipment maintenance staffing needs as necessary. These additional staffing needs should be minimized since the Regional Entity will have its own mechanic and other trained staff. However, the Regional Entity will benefit by having access to the City's experienced landfill equipment mechanics when needed. While the Regional Entity would need to compensate the City of Lynchburg for this service, it should be more

cost effective than hiring part-time master technicians that work exclusively for the Regional Entity or contracting from private parties.

The City already has a system in place where the Fleet Department charges other City departments like Waste Management for equipment maintenance services. The following are the surcharge rates used by the Fleet Department for Fiscal Year 2006.

Labor Rate	$35.19
Parts	26.9%
Sublet	13.0%
Fuel	$0.074

The Regional Entity will need to develop an inter-governmental agreement with the City concerning the basis for the costs of providing this service.

The City also owns a maintenance facility at the Lynchburg landfill that is used for preventative maintenance and minor repair of both landfill equipment and refuse collection vehicles. The City has a software system in place to track maintenance, repairs and costs. Since the City will continue to have a need for the maintenance building, the City will retain ownership and include the use of the building for landfill equipment maintenance in the inter-governmental agreement. During the time period when the Regional Entity will operate at the Lynchburg site, the Regional Entity and the City should proportionally share the costs of the use of this facility. R. W. Beck has calculated the proportional cost for the sharing of this facility between the City and the Regional Entity in Section 3. All major equipment repairs should continue to be performed by the equipment manufacturer, especially when covered by the warranty.

In the future, the Regional Entity will need to evaluate options to determine the most cost-effective way to provide equipment maintenance when transferring operations to the other landfills. Options include:

- Hiring another part- or full-time mechanic
- Contracting for services with the other jurisdictions, if available[4]
- Contracting for services with a third party

The Campbell County landfill includes an equipment maintenance building; however, unlike Lynchburg, the maintenance facility is used exclusively to support landfill operations. R. W. Beck recommends that the Regional Entity purchase the equipment building from Campbell County. With the significant increase of on-site landfill operations equipment, a maintenance facility will need to be constructed at the Amherst County landfill before it is prepared to operate as the regional disposal facility.

[4] The issue with this option is that it is not similar to Lynchburg where they have the maintenance staff on site also performing other vehicle maintenance activities, therefore this is not a likely option.

2.7 Operations at Inactive Landfills

Certain operations at the non-active landfills should be provided by the Regional Entity to meet current customer service needs for each of the participating communities, comply with regulatory requirements associated with the "mothballed" landfills, and operate and maintain environmental control systems (that will continue to function while the landfill is not actively accepting waste for disposal).

Several of the following operations were discussed in the Phase I report. R. W. Beck has identified additional operations to be considered as part of the Regional Entity's responsibility. R. W. Beck recommends that the following operations be performed by the Regional Entity. As such, the proposed staffing and equipment discussed above considers these operations as part of the Regional Entity's responsibility.

2.7.1 Special Waste Collection

Each disposal facility includes areas for the collection of special wastes including tires, white goods and wood waste (clean wood, brush and pallets). The Regional Entity should continue to provide collection of these special wastes when the materials are brought to the landfill. Special waste collection could occur daily at the active landfill since staff will be on site to monitor customer activity. At the inactive landfills, R. W. Beck recommends special waste collection occurs every Saturday. The Regional Entity may consider operating special waste collection every other Saturday from November through February depending on customer needs. It is also likely that a shorter operating schedule could be implemented; for example, special wastes would be accepted from 8 a.m. to 1 p.m. The City of Lynchburg should also continue to bring loosely collected leaves (as opposed to those collected in plastic bags) to the wood waste processing area.

The Regional Entity should purchase Lynchburg's machine used to remove Freon from white goods. The Regional Entity should also purchase the trailer used for storage of the equipment and captured materials. All Freon should be recycled.

In addition, the Regional Entity should purchase one of the existing disposal facilities' wheel loaders to load tires and white goods into open-top bins. The Regional Entity can also purchase the hook-lift truck from the City to haul bins to the local tire and metal recyclers. The Regional Entity will need to purchase Campbell County's lowboy trailer to move the loader from facility to facility as needed. As an alternative, the Regional Entity could evaluate the cost of contracting to a third party for the loading and hauling of special wastes from each facility.

Special waste collection areas at each site should be managed such that piles do not become too large and create a safety issue for customers.

Saturday operations at the non-active landfills will require one staff person (either an Equipment Operator or Site Maintenance Worker). The staff person will act as a spotter and assist customers unloading waste. Some equipment operation may be required and can be transferred from the other facilities as necessary. Staff can be scheduled from the proposed staff; overtime may be required at times. Part-time staff

may be necessary if use of overtime is excessive. It is assumed that the scale facility will not be operated.

R. W. Beck recommends that the Regional Entity contract for chipping of all wood waste collected. In addition, we recommend that all special wastes collected should be hauled off site by the local material recyclers or the Regional Entity, depending on available resources.

2.7.2 Environmental Monitoring and Maintenance of Inactive Facilities

Environmental monitoring will be required for the two inactive landfills. It is assumed that current environmental monitoring requirements will continue while each landfill is inactive. Once a facility reaches capacity and is closed, the landfill will perform environmental monitoring in accordance with the facility's approved post-closure plan.

In addition, each of the inactive landfills will also need to be maintained. It is assumed that these maintenance activities will be similar to post-closure site maintenance. The Regional Entity should be responsible for these activities. Activities include general site maintenance, such as controlling vegetation, and operating landfill control facilities, such as leachate and landfill gas systems.

2.8 Landfill Support Functions

This section discusses other functions that will need to occur to support operation of the Regional Entity's disposal system. The following analysis is based on interviews conducted with various regional authorities in the State of Virginia. The analysis also included a review of public information available pertaining to these regional authorities.

2.8.1 Human Resources

The majority of the regional authorities reviewed have an internal human resources department that provides traditional personnel functions for the authorities and their employees. The majority of the authorities perform their own payroll procedures; however, a smaller authority uses external assistance to complete the payroll process and issue employee checks. This authority pays a member county for certain financial services and also for managing the payroll process.

The Regional Entity should plan to contract with the Region 2000 Partnership or a private entity for human resource services. The Regional Entity should determine which option is most cost effective. Initially, the Regional Entity could also contract with one of the participating communities for human resources services.

The Regional Entity should first plan for its staff to handle personnel functions. The proposed business and human resources manager should manage these functions, with management being provided by the director and assistance provided by the

administrative assistants. The Regional Entity should evaluate opportunities to obtain payroll services from the Region 2000 Cooperative Partnership, one of the participating communities, or from a private company that provides these services.

2.8.2 Retirement System

All of the authorities interviewed use the Virginia Retirement System to provide benefits to their employees. The interviews revealed two scenarios when the authorities were created: (1) When the authority was created, as a new entity all employees were placed under the VRS system, and (2) when another authority was created, the employees stayed under their current retirement systems. In this case, some employees were under the VRS plan, while others were under the City retirement system. All new hires were placed under the VRS plan and currently all employees under the City retirement system have retired.

Since the three participating communities are under the VRS system, R. W. Beck would recommend all employees of the Regional Entity remain under the VRS system.

2.8.3 Insurance

R. W. Beck evaluated options for the Regional Entity to attain worker's compensation and liability insurance.

- Worker's Compensation: The insurance providers of choice for the authorities interviewed are the Virginia Association of Counties or the Virginia Municipal League. The premiums for Worker's Compensation insurance consider the payroll amount, the type of job classifications, ratings per position and an experience factor established by the National Council on Compensation Insurance.
- Liability Insurance: The authorities maintain different levels of liability insurance. The following lists the various type of liability insurance the authorities have: general liability, auto liability, excess liability, pollution and public official's liability.

R. W. Beck requested an annual cost estimate from the Virginia Association of Counties for both worker's compensation and liability insurance. This information is included in Section 4. Liability insurance included general liability, auto liability, and public official's liability.

2.8.4 Legal Counsel

The authorities interviewed use external legal counsel. Legal counsel arrangements included either using private firms or having access to an attorney who was a full-time employee with a separate commission (airport). The Regional Entity should consider retaining external attorneys to provide legal counsel based on the annual needs and projects of the organization.

2.8.5 Consultants

The authorities interviewed hire external consultants for construction projects, environmental services, financial auditing and management/financial services. The annual amount budgeted by the authorities for these services varies and depends on the nature of the projects planned for each year. The Regional Entity should consider retaining external consultants on an as needed basis. The Regional Entity would likely need to hire a consultant to complete its first regional plan.[5]

2.8.6 Accounting

The majority of the authorities interviewed have an internal accounting department. One of the authorities pays a member county for certain financial services that include entering billing data into the system and printing of the bills. Another authority shares administrative staff with the regional water and sewer authority and pay an allocated share of joint expenses.

The Regional Entity should plan to contract with the Region 2000 Partnership or a private entity for billing services. The Regional Entity should determine which option is most cost effective. Initially, the Regional Entity could also contract with one of the participating communities for billing services.

2.9 Landfill Support Facilities

This section discusses other facilities required at the active and/or inactive landfill sites associated with the Regional Entity operation of the disposal system. Staff and equipment proposed account for operations of these facilities.

2.9.1 Scale Facility Operations

The regional landfill will require at least a two-scale scale facility to accommodate the volume of customer traffic accessing the site. Currently, the City of Lynchburg is the only landfill with a two-scale facility.

The scales can be used at more than one facility if maintained in good condition. Therefore, the Regional Entity should not need to purchase new scales for the Campbell and Amherst landfills. The Regional Entity will want to contract with a scale company to perform regular maintenance and calibration of the scales in use at the active landfill. In addition, the scales left idle for several years will need to be inspected and tested before going back into operation; these scales may require some repairs or parts replacement. R. W. Beck recommends that idle scales also be inspected midway through their idle period.

[5] The Regional Entity could decide in the future whether to develop future updates to the regional plan internally or by hiring a consultant.

2.9.2 Leachate Storage and Disposal

The leachate from the Lynchburg landfill flows by gravity into the headwall of the City's wastewater treatment facility. There is an agreement between the treatment plant and landfill for the cost of leachate disposal and treatment. Table 2-16 indicates the charges to the landfill for the cost of treatment over the past four years. The Regional Entity will need to establish a similar agreement with the wastewater treatment facility.

Table 2-16
Leachate Treatment Charges for Lynchburg Landfill

Fiscal Year	Cost of Treatment
2003	$50,000
2004	$51,550
2005	$55,167
2006	$57,925

Flow measuring instruments were installed to measure the leachate flow but after taking several measurements, the City decided to use an average flow to determine the appropriate charges. The flow has not been measured and recorded in several years.

Leachate generated at the active Campbell and Amherst landfills is stored on site and must be hauled to a disposal facility. The Regional Entity will take over the responsibility for hauling leachate. Leachate hauling will be required while the landfills are inactive. The Regional Entity will be responsible for hauling leachate.

Once the landfill becomes the active regional disposal facility, the Regional Entity will be responsible for the cost of hauling and disposal. It will be difficult to estimate the portion of the leachate generated from waste in place prior to forming the Regional Entity versus the waste placed by the Regional Entity. Leachate quantities are anticipated to decrease over time, especially following closure.

When each facility is closed, the cost of hauling and disposal of leachate should be included in the annual post-closure care cost estimate. Each participating community should reimburse the Regional Entity for a portion of the cost based on the percentage of capacity used prior to forming the Regional Entity.

The Campbell County landfill includes a 380,000 gallon double tank for the storage of leachate. The County uses a tank truck to haul leachate to a City of Lynchburg sewer connection for disposal. Over the past ten years, Campbell County has averaged approximately 1,274,000 gallons of leachate disposal each year.

The Amherst County landfill includes a 667,000 gallon lined leachate lagoon. Leachate is pretreated by aeration. The lagoon was designed to handle the leachate generated in Trench A/B. A new lagoon will be required when Trench C begins operation. The new lagoon has been designed with a capacity of 323,000 gallons to accommodate leachate flows from Trenches C, D and E. The County currently contracts with a private company to haul leachate for disposal. From 1999 through 2004, Amherst County has hauled an average of about 2,100,000 gallons per year.

2.9.3 Storm Water Facilities

Each landfill manages storm water runoff from the site. Storm water is collected and routed to detention ponds prior to site discharge. The Lynchburg Landfill has two stormwater basins that will accommodate all future planned phases of landfill development. The storm water pond at the Campbell Landfill has been sized to accommodate flow from the existing Phase III and future Phase IV landfills. The Amherst County landfill includes a detention pond. The County indicates the pond is not sized to accommodate flows from the fully developed site.

2.9.4 Landfill Gas Control Systems

The Lynchburg and Campbell County closed landfills include landfill gas control systems consisting of collection wells installed within the waste. At the Campbell County landfill, landfill gas is routed to a flare station where the gas is burned. The existing system is currently operated by Campbell County landfill staff.

The City of Lynchburg is under contract with Lynchburg Gas Producers, LLC for the development and operation of the landfill gas recovery system. Rather than burn the landfill gas, Lynchburg Gas Producers, LLC sells the gas to commercial end users. Lynchburg Gas Producers, LLC owns the landfill gas rights and the collection system.

2.9.5 Borrow Sources

The City of Lynchburg anticipates a lack of on site soils for cover material. The City proactively seeks free soil from local highway and various construction projects. Over the past two years, the City has received approximately 350,000 cubic yards of material. The City also owns 200 acres across the street from the landfill and was planning to use the property as a borrow source if necessary. The City would be interested in selling soil, but not the property, to the Regional Entity.

Campbell County is obtaining cover soil from future Cells 6 and 7 and eventually will excavate for cover soil as part of the development for Phase IV. The County's engineer also reports that the County removes a portion of their daily cover material each morning as a method to maximize the available capacity for refuse disposal.

Amherst County has limited quantities of soil on site for daily cover. The County currently uses alternative daily cover (i.e., plastic tarps) as much as possible to preserve the available soil.

We recommend that the Regional Entity evaluate alternative covers at each of the regional landfills regardless of soil availability in order to preserve landfill capacity and to extend the life of each facility.

2.9.6 Regional Entity Administration Building

For the most effective management of the regional operation, R. W. Beck recommends that the Regional Entity's landfill administration staff be located at the facility acting as the regional landfill. Each landfill currently has an existing office; however, the

Lynchburg landfill office is the only facility with space adequate for the number of staff required. Table 2-17 indicates the current square footage of each office building including the number of office spaces and conference rooms.

Table 2-17
Existing Office Buildings

Landfill	Square Footage	Offices/Work Stations	Conference Rooms
Lynchburg	3,375	7	2
Campbell	2,140	2 w/ scale house	1
Amherst	1,200	2 w/ reception	1

The City of Lynchburg is interested in retaining ownership of their existing office building since it is also used to administer the City's refuse collection operations. However, the City would be amenable to leasing space to the Regional Entity for landfill administration staff for the period in which the City's landfill is operating as the regional disposal facility. During the time period when the Regional Entity will be operating at the Lynchburg site, the Regional Entity and the City should proportionally share the costs of the use of this office. R. W. Beck has calculated the proportional cost for the sharing of this office between the City and the Regional Entity in Section 4.

The Campbell and Amherst County landfills will require building additions, or annexes, to accommodate the Regional Entity administration staff. An annex-style building, such as a mobile trailer, will be most cost effective since it could be relocated from Campbell to Amherst when the regional operation moves.

2.9.7 Accounting and Billing Software

Each participating community has accounting and billing software that is used to support landfill operations. All three landfills use Paradigm software. R. W. Beck would recommend that the Regional Entity continue using this software system for both tracking tonnage data and for accounting and billing functions.

2.10 Facility Capital Improvements

This section identifies major facility capital improvements associated with preparing the facility for operation as the regional landfill to accommodate increased traffic volumes and waste tonnages. These facility capital improvements exclude future cell development under Regional Entity operation.

Included with the description of each capital improvement is a planning-level cost opinion. Note that the cost opinions provided are based on R. W. Beck's experience at other similar facilities across the United States and without the benefit of any conceptual design. All costs are in 2005 dollars, do not include sales tax and include the following allowances:

- Permitting 1%
- Geotechnical 2%
- Surveying 1%
- Engineering 8%
- Administration and Legal 5%
- Contractor Mobilization 10%
- Construction Management 5%

Typically, these allowances may be higher for small projects. Therefore, where construction costs are low (i.e., less than $500,000), the Regional Entity should anticipate higher costs for engineering, etc.

Since there are not any conceptual plans or designs used to develop these cost opinions, the cost opinions represent a range of minus 30 percent to plus 40 percent of the estimated project cost. We strongly recommend that the Regional Entity commence planning of these improvements as soon as possible to better understand costs and timing required for the improvements

2.10.1 Campbell County

Before the Campbell County landfill can be operated as the regional facility, several improvements may be required in order to accommodate the increase in the number of customers and waste tonnage.

The existing scale facility consists of a single scale used for both inbound and outbound customer transactions. The increase in customer traffic will require a second scale to process customers in a timely manner and minimize traffic queues in both directions. The existing scale house is integral with the landfill office building and therefore does not allow expansion of the facility with a second scale that is adjacent to the existing scale house. To minimize the cost of the facility upgrade, the new scale house could be constructed immediately north of the existing scale with the new second scale installed on the north, or on the outbound, side of the scale house. If the Campbell County landfill operates as the second regional facility (after Lynchburg landfill closes), the new second scale could be the existing Amherst County landfill scale. The layout for the new scale facility will also require modifications to the on site roads in the vicinity of the scale facility as well as utilities to serve the facility. R. W. Beck estimates that the cost of the improved scale facility to be $118,000 to 240,000.

There may also be a need to improve access to the site from US-29 and along Livestock Road. However, these improvements may not be considered essential to operating the Campbell County landfill as the region facility. While operating the site as regional facility could increase traffic around and into the site, it would not directly impact landfill operations. It may be the case that it is not economically viable to make these improvements. R. W. Beck would recommend that the Regional Entity consult with VDOT or other transportation planners/engineers to evaluate whether

potential traffic increase would merit making the capital improvements. Transportation experts may also be able to recommend less capital intensive ways to address this issue.

Livestock Road is a two-lane road that accesses the landfill site and a few other commercial businesses. During certain times of the year, the County reports that trucks for the other businesses completely block one lane of the road. Widening Livestock Road will accommodate the increase in traffic volumes to and from the landfill but more importantly allow landfill traffic to access the site unimpeded and safely at all times. It does not appear to be reasonable for the County or Regional Entity to pay the full cost of the improvement since traffic to the other businesses currently impacts the landfill operation. Based on our observation of Livestock Road, landfill traffic does not adversely affect the other businesses. R. W. Beck estimates that the cost to widen Livestock Road to be $190,000 to $380,000.

Livestock Road intersects with Calohan Road approximately 100 feet from the intersection with US-29. No turning lane onto Livestock Road from Calohan Road is provided. The increased traffic volumes, especially from larger solid waste collection and transfer vehicles will likely impact traffic on US-29. A new intersection configuration will be helpful to accommodate the increase in traffic accessing the landfill as well as others traveling on these County roads. R. W. Beck estimates that the cost of a new intersection configuration at this location to be between $750,000 and $1,500,000. The Regional Entity should review these necessary improvements with the Virginia Department of Transportation to determine if the state will share in the cost for the improved roads.

An alternative to the road improvements would be to consider a new alignment for Livestock Road and intersection with Calohan Road. The County indicates that there is an existing section of property near the existing intersection (i.e., farther from US-29). About 50% of that property is owned by Campbell County. The remainder of the property is owned by the trailer park and would need to be purchased. In addition, about two-thirds of the property is treed and would need to be cleared. Finally, Calohan Road would need to be widened at the new intersection in order to create turn lanes. R. W. Beck estimates that the cost of the new Livestock Road alignment and intersection with Calohan Road, including improvements to Calohan Road and purchase of property would be between $200,000 and $400,000.

2.10.2 Amherst County

Before the Amherst County landfill can be operated as the regional facility, several site and facility improvements are required in order to accommodate the increase in the number of customers and waste tonnage.

The most significant improvement for the Amherst County landfill would be widening Isaak Walton Road, the existing three-mile long, two-lane road accessing the site.[6] The County indicated that neighbors of the landfill are already concerned that the lack

[6] Amherst County staff are in the process of discussing this issue with VDOT staff. The outcome of these discussions could affect the information provided in this paragraph.

of any roadway shoulders is a safety issue for pedestrians. Based on visual observation, there may also be sight distance issues. The increased traffic to the facility when operating as the regional landfill will make the existing condition even more dangerous. Isaak Walton Road should include slightly wider lanes with shoulders. R. W. Beck estimates that the cost of this improvement would be between $1.0 and $2.1 million. The Regional Entity should review this necessary improvement with the Virginia Department of Transportation to determine if the state will share in the cost for the improved roads.

The County reports that the location of the existing scale facility is in conflict with the permitted final cover grading plan for Trench A. As a result, the scale facility will need to be relocated. The County also reports that the existing site entrance may not provide adequate sight distance at the intersection with Isaak Walton Road. In addition, the horizontal alignment of the existing site entrance road requires larger vehicles, such as transfer trailers, to cross the unmarked centerline into oncoming traffic. As part of the scale facility relocation, a new site entrance should be considered to provide adequate turning radiuses and sight distances. When considering options for the new scale facility location, the approach road should provide sufficient vehicle queue lengths for the anticipated increase in traffic for when the facility operates as the regional landfill. R. W. Beck estimates that the cost of a new site entrance to be $125,000 to $250,000.

The existing scale facility, similar to Campbell County, operates with a single scale used for both inbound and outbound customer transactions. The new scale facility must include a second, outbound scale to accommodate the increase in customers and maintain reasonable queues during peak operating times. With a two scale facility, the Regional Entity should consider a new scale house that has a narrower dimension between the scales providing more efficient operation and comfortable work environment for the scale attendants. Based on our planning and design experience, R. W. Beck estimates the cost of a new scale house to be between $60,000 and $115,000.

As part of the transition process from Lynchburg to Campbell, it is likely that the existing Amherst scale, assuming it has been maintained in good condition, will be installed as the second scale at Campbell County. Following final closure of the Lynchburg landfill, the two existing scales at that facility could be reinstalled at the new Amherst scale facility. R. W. Beck estimates that the cost of relocating two scales from Lynchburg to Amherst County, including the new infrastructure (i.e., scale foundations) to be $35,000 to $70,000.

The on-site roads, accessing the landfill working face in Trench A, were not constructed with adequate turning radiuses to support all types of vehicles currently using the site. Higher on site traffic volumes will also introduce more wear to the crushed rock road surfacing requiring more maintenance. It is recommended that the Regional Entity evaluate on site access road alignments and consider paving roads outside the limits of the permitted waste boundaries. Paved roads will perform better in inclement weather. R. W. Beck estimates the cost of on-site road improvements to be between $25,000 and $50,000.

Finally, the Amherst County landfill will need to construct an equipment maintenance building to accommodate the maintenance and repair needs for the additional equipment that will be required to handle the increased quantities of waste delivered to the site. R. W. Beck estimates that the cost of a new equipment maintenance building to be $215,000 to 425,000.

The total cost of improvements for the Amherst County landfill to be used as one of the regional landfills is in the range of $1.5 to 3.0 million. The site life analysis estimates that the Amherst County landfill will have capacity for about 867,000 tons of waste, which would provide approximately three years of additional landfill life R. W. Beck completed a financial analysis to determine whether it would to the Regional Entity's benefit to invest in these capital improvements to gain the additional capacity or whether the Regional Entity would be better served by investing the money in a transfer station that would be begin operation once Campbell County landfill closes.

Based on the analysis, R. W. Beck estimates the Regional Entity would save approximately $10 million if it were to take advantage of the Amherst County landfill capacity rather than expedite the construction of a regional transfer station. In this analysis, R. W. Beck assumed that the Regional Entity would haul waste to the Amelia Landfill. Although the disposal cost at Amelia is similar to the Regional Entity's disposal cost per ton, the cost of long-hauling waste to the Amelia Landfill is significant and outweighs cost for the Amherst County landfill improvements. R. W. Beck recommends the Regional Entity use the capacity available at Amherst County landfill.

If the Regional Entity were to choose not to use the Amherst County as a regional landfill, it has several options:

- Increase the tonnage to the Amherst landfill as soon as possible: This would involve sending waste to the landfill from other Region 2000 communities. The objective would be to fill the landfill as much as is reasonably possible (given operational, regulatory and facility constraints) so that Amherst County could recover landfill development and capital costs.[7] This would also allow the facility to achieve a more reasonable final grading plan for closure.
- Use the landfill for construction and demolition (C&D) materials: Once the Regional Entity begins operations, the Amherst County Landfill could be used for C&D materials. This should allow for increased operational efficiency at the other landfills while still using the Amherst County landfill.
- Use the landfill after closing the Lynchburg and Campbell landfills; however, only after the Regional Entity develops a transfer station. This would reduce the traffic

[7] If there is an interest in this option, R. W. Beck could assist the participating communities in further developing this concept and in determining associated financial costs and compensation. For example, if the City of Lynchburg would send waste to the Amherst County landfill, Amherst County would need to receive some form of compensation for the use of airspace. While the City of Lynchburg would not likely be in a position to directly pay for this airspace (since it is operating its own landfill), the City could be compensated by the Regional Entity for airspace that would not be used for waste going to Amherst County.

to the landfill (i.e., limited to transfer trailers rather than all customers) and potentially reduce the amount of improvements required. Hauling costs to the Amherst County landfill would be significantly less than the hauling costs to the Amelia Landfill.

2.11 Optional Regional Entity Operations

The following solid waste related activities could be provided by each of the jurisdictions but may be most cost-effectively performed by the Regional Entity due to the availability of staff and equipment. However, since these activities are not associated with providing landfill disposal or special waste handling for the participating communities, the Regional Entity should be reimbursed for the work.

2.11.1 Customer Convenience Stations

The two non-active landfills (initially Campbell and Amherst, and subsequently Lynchburg) should continue to operate as customer convenience stations (CCS). Each jurisdiction also operates CCS throughout their community. Initially, R. W. Beck recommends that each jurisdiction continue to service their own CCS, including the CCS located at the inactive landfills. This includes hauling full containers, providing empty containers, and cleaning the site. Long-term, R. W. Beck would recommend that the Regional Entity coordinate a regional approach to providing this service either via the Regional Entity or private sector. If the Regional Entity provided service for the CCS, each jurisdiction should be responsible for a portion of the cost depending on the number of sites within each jurisdiction and the quantity of waste collected at each site (i.e., how often sites require service).

If the Regional Entity accepted full responsibility for operation of the convenience stations, each jurisdiction should be required to upgrade their facilities to meet the Regional Entity's service requirements. R. W. Beck recommends that each site be fenced for security and to prevent vandalism. Depending on the quantity of material received, types of wastes accepted and number of customers, the Regional Entity will need to evaluate the need for staffing each station. Unmanned stations are also more susceptible to disposal of prohibited wastes.

Currently, sites in Campbell County include compactors, which are all mobile. Amherst County has a dual system. Some sites have roll-off and packer containers that are serviced by one truck through a service contract. The Regional Entity should also evaluate the number of sites and quantities of waste collected to determine if some sites can be combined or closed altogether to reduce operations costs but without impacting customer service.

It's likely that two drivers and one laborer would be required to service and maintain all of the CCS. The Regional Entity should evaluate the need to staff each station to manage non-permitted uses, such as use by commercial customers. Use of the stations by non-permitted customers results in the loss of revenue generated at the landfill.

2.11.2 Household Hazardous Waste (HHW) Collection

Lynchburg currently provides no-fee HHW collection four times per year for City residents. Collection of HHW materials, such as used oil, paints, insecticides, and pesticides, occurs on the second Saturday in April, June, August and October between 9 a.m. and 1 p.m. If the Regional Entity took over operation of this program, they could provide the service to each of the participating communities.

The City owns a portable trailer that could be purchased by the Regional Entity and moved around to each community. Each community would be required to pay for its share of the program cost, but would not be required to participate. The City currently contracts with a private company to dispose of the materials collected, which has averaged approximately $15,000 per year. The Regional Entity would need to establish a similar contract for disposal.

The Regional Entity would also need to provide properly trained staff at each event. Training would consist of the OSHA 40-hour and 8-hour annual refresher HAZWOPER course. The City has provided staff for each event through overtime. If the City of Bedford and Nelson County participated, there could be as many as 20 HHW collection events each year.

R. W. Beck recommends that the Regional Entity be responsible for this program serving all participating communities. Providing HHW collection to each of the communities will minimize the amount of HHW that is disposed of in the landfill. Participating communities would need to pay for their proportional disposal costs for HHW.

2.11.3 Post-Closure Care of Closed Landfills

The Lynchburg and Campbell County disposal facilities include closed landfills that are currently in post-closure care. The closed Lynchburg landfill is 75 acres and the closed Campbell landfill is 25 acres. Post-closure care activities for both of these landfills will be required to continue even when the facility is inactive for disposal operations. Each jurisdiction is financially responsible for performing post-closure care activities.

Since the Regional Entity will be performing site maintenance at both the active and inactive landfills, R. W. Beck recommends that Lynchburg and Campbell County contract with the Regional Entity to perform post-closure care for the closed landfills. Post-closure care includes maintaining the vegetative cover, repairing damage caused by erosion, addressing settlement of the final cover and repairing damage to the final cover system.

Post-closure care also includes on-going environmental monitoring. Environmental monitoring requirements are outlined in each facility's Post-Closure Plan.

Each jurisdiction should continue to be financially responsible for the cost of post-closure care performed by the Regional Entity. Lynchburg and Campbell County should reimburse the Regional Entity for performing post-closure care activities. All activities defined in the facility's post-closure plans should be paid for on an annual

basis. Activities that are not included in the facility's post-closure care plans but are required in the future shall also be reimbursed. Depending on the activity, reimbursement may be a single payment or a negotiated annual payment.

2.11.4 Remediation Actions at Closed Landfills

The City of Lynchburg and Campbell County landfills are in the process of installing remediation systems for their closed landfills. The City is implementing a landfill gas remediation plan which involves installing landfill gas wells at two separate locations at the landfill site to control off site landfill gas migration.

Campbell County is installing a ground water treatment system. All three landfills are performing groundwater compliance monitoring. However, at this time, the City of Lynchburg and Amherst County have not been required to perform any type of remedial action. Since the Regional Entity will already have staff at each site operating the active and maintaining the inactive landfills, the Regional Entity should also operate the environmental remediation facilities for the closed landfills. R. W. Beck recommends that each community reimburse the Regional Entity on an annual basis. For the first year of operation, the annual payment should be based on an estimate of the operating costs. Subsequent years should be based on the cost of operation from the previous year. Each community will also be responsible for any modifications to the facilities, including capital improvements, necessary to comply with future regulatory orders.

2.12 Operating Multiple Active Landfills

Depending on regulation interpretation by state permitting officials, VDEQ may require final closure, or at least an interim closure, of the mothballed facilities to protect the environment and human health (see Section 5 for additional discussion regarding VDEQ solid waste regulations pertaining to inactive landfills and the cost evaluation of installing cover systems at the mothballed landfills). The cost of installing a cover system may be more costly than operating two landfills at the same time. If the cost of closure suggests operating two landfills, we recommend that the Regional Entity operate the City of Lynchburg and Campbell County landfills since the landfill in Amherst County would represent the least cost of closure based on the current active area. Under this scenario, the Lynchburg landfill would be operated several days per week while the Campbell County landfill is operated the other days. The landfill staff would split time at each landfill so that no additional staff would be needed as compared to operating one regional landfill.

This scenario would also require additional equipment be retained and maintained by the Regional Entity. It is likely that the following additional equipment would be required to operate the Campbell County Landfill, assuming that the (mobile) equipment identified above for Lynchburg would be available as needed at Campbell (e.g., the tank trailer for hauling leachate):

- two compactors;

- one scraper;
- one dozer; and
- one loader.

This would be considered the minimum equipment required for the majority of the operations at the Campbell County landfill. No additional equipment would need to be purchased by the Regional Entity at the beginning of operations; however, the additional existing equipment would need to be replaced – an avoided cost if only one landfill operates at a time. If the Regional Entity operates a single landfill, some of this additional equipment would have value if sold.

R. W. Beck evaluated the financial impact of operating two landfills. The two landfills would be operated a total of six days a week. R. W. Beck evaluated three scenarios based on varying the number of days each landfill was operated:

- **5-1:** Lynchburg would be operated five days a week and Campbell would be operated one day a week.
- **4-2:** Lynchburg would be operated four days a week and Campbell would be operated two days a week.
- **3-3:** Each landfill would be operated three days a week.

The fill rate changes by varying the number of days each landfill is open. The goal in concurrently operating the two landfills would be to fill the remaining capacity at either the Lynchburg landfill or Phase 3 of the Campbell County landfill in the least amount of time with minimal disruption of overall solid waste operations. Doing so would reduce the amount of time that two sets of landfill equipment would be needed. Table 2-18 lists each scenario and the equipment replacement costs for each scenario.

Table 2-18
Concurrent Operation Scenarios

Scenario	Close Date	First Landfill to Close	Equipment Financial Impact
5-1	April 2014	Lynchburg	$690,000
4-2	December 2015	Lynchburg	$1,000,000
3-3	August 2013	Phase 3 Campbell	$640,000

Notes:
R. W. Beck assumed that at the appropriate close date, any equipment purchased could be sold to recover the remaining value of the equipment.

It appears that operating on a 3-3 schedule makes the most sense based on the financial impact of equipment replacement. However, if Phase 3 of the Campbell County landfill closes first, the Regional Entity would have to transition all operations to the Lynchburg landfill until it closes, then transition all operations back to Phase 4 of the Campbell County landfill. Since the 5-1 and 3-3 scenarios are similar in terms of close date and equipment replacement financial impact, R. W. Beck would suggest the Regional Entity pursue this scenario with DEQ if concurrent operations are required. However, since DEQ approval may dictate which scenario the Regional

Entity could pursue, the Regional Entity should be prepared to operate under any of three scenarios.

In addition to the financial impact of additional equipment purchases, the Regional Entity would encounter other incremental costs associated with concurrently operating two sets of landfill equipment landfills. These incremental costs would largely consist of equipment maintenance charges. R. W. Beck estimates that these incremental costs would be $40,000 to $80,000 annually.

Operating the Campbell County landfill in the near term would also require that improvements at Campbell County would need to be completed in the near term rather than delayed or implemented over time. Increasing the number of operating days per week at the Campbell County landfill increases the likelihood that these capital improvements would be needed.

This scenario is also less attractive for (residential and commercial) customers. Customers must remember which day each landfill is operating. In addition, collection companies may need to re-evaluate collection routes to make it most efficient depending on which day each landfill is operating.

If the Regional Entity operates two landfills, we recommend that the administration staff be located at the facility that operates more days per week.

Section 3
Financial Inventory of Existing Solid Waste Assets and Liabilities

3.1 Introduction

The purpose of this section is to develop a financial inventory of the various assets and liabilities each community with a landfill would contribute to the regional solid waste system. To develop this analysis, R. W. Beck met with staff from each facility, toured each facility and received/developed asset and liability lists from each of the landfill communities. The inventory of the value of assets and liabilities focused on the categories in Table 3-1.

Table 3-1
Categories of Assets and Liabilities

Assets	Liabilities
Site Improvements	Debt Service
Landfill Capacity and Land	Leases
Buildings	Closure
Equipment and Rolling Stock	Post-Closure
Closure and Post-Closure Reserve Funds	

Within this section, R. W. Beck provides a discussion of the methodology to value the assets and liabilities for each landfill. R. W. Beck developed a consistent methodology for each class of assets to ensure that all assets within the same class are valued in an equitable manner between the participating communities. All assets and liabilities are estimated values as of July 2007, which was selected to be the projected date of when the Regional Entity would begin landfill operations. However, it may be the case that the Regional Entity does not begin landfill operations until after this date. If this occurs, the values expressed in this report would need to be updated. The section concludes with a series of tables that summarize the financial inventory for each landfill community.

3.2 Use of Financial Inventory

This financial inventory is intended to assist each of the participating communities to determine the value of landfill assets and liabilities based on actual cost, in order to ensure that each entity is compensated in an equitable manner for their expenditures. R. W. Beck would emphasize that this financial inventory should not be used to

determine the potential value of these assets to an outside (e.g., private) entity. A valuation or appraisal for an outside entity would need to be completed using different methodologies, which would account for issues such as future income, appreciation and market conditions.

3.3 Assets

3.3.1 Site Improvements

Site improvements are physical changes or additions that have been made at the sites that are not directly associated with landfill capacity (e.g., the physical location where waste is deposited). Examples of site improvements include but are not limited to:

- Drainage and erosion control systems (e.g., storm water ponds, pipes, etc)
- Fencing
- Monitoring systems
- Leachate systems (e.g., pipes, tanks, pumps)
- Roads and concrete work
- Site Preparation (e.g., grading, clearing, re-routing waterways)

R. W. Beck estimated the remaining value for these types of assets relative to the remaining capacity of each landfill.

Table 3-2
Site Improvement Asset Summary by Landfill

Landfill	Data Source	Remaining Value
City of Lynchburg	Detailed asset list	$1,768,653
Campbell County	Estimates provided by County staff	$516,471
Amherst County	Estimates provided by County staff	$305,995
Total		$2,591,119

Note: Remaining value based on calculations developed by R.W. Beck using information provided from each landfill community; refer to the Schedule 6 in Appendix A. Remaining values are as of July 2007.

3.3.2 Landfill Capacity and Land

Landfill capacity and land focuses on the assets directly associated with cell/phase development and waste disposal. Landfill capacity assets include but are not limited to:

- Engineering and construction of cells/phases
- Permits
- Reports (e.g., environmental assessments, surveys, etc.)

- Liners

In addition, R. W. Beck inventoried land at each site. Land included in the inventory was based on an estimate of the amount of land that is currently receiving or will receive waste in future. This approach excluded land that has already been filled with waste. The value of the land was based on a combination of estimates provided by landfill staff from each facility, which ranged from $3,000 to $5,000 per acre. The actual value per acre was based on the actual historical acquisition costs incurred by the City of Lynchburg, which have averaged $3,065 per acre.[1]

R. W. Beck estimated the remaining value for the landfill capacity and land assets relative to the remaining capacity of each landfill.

Table 3-3
Landfill Capacity and Land Asset Summary by Landfill

Landfill	Data Source	Remaining Value
City of Lynchburg	Detailed asset list	$2,947,112
Campbell County	County estimates on size and Lynchburg data on land costs	$1,096,017
Amherst County	County estimates on size and Lynchburg data on land costs	$1,441,851
Total		$5,484,980

Note: Remaining value based on calculations developed by R.W. Beck using information provided from each landfill community; refer to the Schedule 6 in Appendix A. Remaining values are as of July 2007.

3.3.3 Buildings

Buildings include physical structures used for purposes such as administrative offices, maintenance shops, storage and scalehouses. R. W. Beck estimated the remaining value for these types of assets relative to the remaining capacity of each landfill.

Table 3-4
Buildings Asset Summary by Landfill

Landfill	Data Source	Remaining Value
City of Lynchburg	Detailed asset list	$42,766
Campbell County	Estimates provided by County staff	$175,305
Amherst County	Estimates provided by County staff	$116,963
Total		$335,034

Note: Remaining value based on calculations developed by R.W. Beck using information provided from each landfill community; refer to the Schedule 6 in Appendix A. Remaining values are as of July 2007.

[1] Amherst County and Campbell County did not have specific records indicating land acquisition costs.

3.3.4 Equipment and Rolling Stock

Equipment and rolling stock assets include the following types of assets:

- Vehicles (e.g., pick-up trucks, dump trucks, fuel trucks, trailers and cars)
- Heavy equipment (e.g., compactors, dozers, pan scrapers and loaders)
- Auxiliary equipment (e.g., light towers, pressure washers, litter vacuums and mowers)
- Computer equipment (e.g., hardware and waste disposal and billing software)

These types of assets were valued based on the actual life of each asset using straight-line depreciation. In cases where the equipment and rolling stock are older than anticipated useful life, R. W. Beck did value the asset as salvage based on the following percentages of original cost:

- Heavy equipment: 7%
- All other equipment: 3%

As discussed in Section 2.6, the Regional Entity will not keep all equipment acquired from the participating communities.

Table 3-5
Equipment and Rolling Stock Asset Summary by Landfill

Landfill	Data Source	Remaining Value
City of Lynchburg	Equipment list from Phase I analysis	$674,562
Campbell County	Equipment list from Phase I analysis	$541,507
Amherst County	Equipment list from Phase I analysis	$29,710
Total		$1,245,779

Note: Remaining value based on calculations developed by R.W. Beck using information provided from each landfill community; refer to the Schedule 5 in Appendix A. Remaining values are as of July 2007.

3.3.5 Closure and Post-Closure Reserve Funds

R. W. Beck also accounted for any savings from any of the participating communities that are in place to fund future closure and post-closure costs. The City of Lynchburg is the only one of the three landfill communities that has an existing dedicated closure and post-closure fund. Amherst County and Campbell County expect to fund these costs in the future using cash capital outlays or by issuing debt. The reserve fund in place by the City of Lynchburg is an asset that can be used to off-set the current closure and post-closure liabilities, as discussed in Section 3.4.2. R. W. Beck would emphasize that in order for the City to realize a zero net liability, the City would need to transfer the reserve amount to the Regional Entity.

3.3.6 Potential Assets

The City of Lynchburg has a contract with Lynchburg Gas Producers, LLC that will generate revenue for the City provided that a minimum quantity of gas (36,500 BTU) is collected annually. Lynchburg Gas Producers, LLC will pay a gas payment right for a period of 30 years. The annual amount fluctuates, based on the projected quantity of gas that will be extracted.

The value of this asset, from the perspective of the City and the Regional Entity, will change over time. Since the value of this asset will depend on (1) whether the minimum quantity is met and (2) on the allocation of waste between the City and the Regional Entity, R. W. Beck would recommend that the value of this asset be accounted for annually between the City and the Regional Entity. The basis for the revenue sharing between the City and the Regional Entity is discussed in Section 4.4.

The Regional Entity and the City of Lynchburg will need to proportionally share the revenue generated by the gas payment right based on the contract that the City has with Lynchburg Gas Producers, LLC. The gas payment right should be paid based on the following methodology:

1. Lynchburg Gas Producers, LLC pays the gas payment right based on the landfill meeting the minimum quantity of gas collected annually;
2. The allocation of the gas payment right between the City and the Regional Entity should be based on the percentage of total waste in place. This percentage will change as the Regional Entity increases the amount of waste in the landfill.

3.3.7 Assets to be Used but not Owned by the Regional Entity

There will be several assets at the landfills that the Regional Entity will use but not own. For example, the Regional Entity would use the administration and maintenance buildings at the City of Lynchburg facility. However, the City also uses these facilities for its collection operations. After the Lynchburg Landfill reaches capacity, the City will continue need and use these buildings for its collection operations. Therefore, R. W. Beck has valued these types of assets by accounting for the following types of issues:

- Assets may continue to be used for landfill and non-landfill (e.g., collection) purposes. In these cases, original values were adjusted based on how the assets are used.
- After the landfill reaches capacity, the city/county will continue to use the asset. In these cases, the Regional Entity would be responsible for depreciation during the period of time when the Regional Entity uses the asset. This is an issue for assets that have a remaining useful life that is significantly longer than the time period when the landfill will need the asset.

Since the city/county will retain ownership of these assets, the Regional Entity would be responsible for compensating the city/county for its proportional use of the asset.

R. W. Beck has included these costs in the annual operating budget, and these costs would need to be accounted for as part of the compensation scenarios.

3.4 Liabilities

3.4.1 Existing Debt and Leases

Local governments will frequently purchase assets using cash, leases or debt (e.g., bonds). In cases where any of the participating communities have existing leases or debt for the assets listed in Section 3.3, there is a need to account for the amount owed. Based on information provided as a part of this review, the City of Lynchburg and Amherst County have outstanding debt associated with its respective landfill operations. Campbell County does not have any existing leases or bonds.

The existing debt for the City of Lynchburg includes principal and interest payments on multiple bonds through Fiscal Year 2016. The principal amount of the City's debt at July 2007 will be $3.7 million. The remaining debt for Campbell County at July 2007 will be $1,089,337. There will be five years remaining on the term of the debt.

3.4.2 Closure and Post-Closure Costs

Once each landfill reaches capacity, there will be a need to fund closure and post-closure care costs. While these costs will be paid in the future, the liability associated with these costs accrues relative to the fill rate of the landfill. Consequently each landfill has an existing liability that is directly proportional to the quantity of waste in place relative to the total capacity of the landfill.[2] The closure and post-closure care costs are a liability that must be accounted for in this financial inventory. R. W. Beck estimated these liabilities when conducting the Phase 1 "Regional Solid Waste Management Analysis." This information was updated to reflect the current liability as of July 1, 2007.

R. W. Beck also accounted for any savings from any of the participating communities that are in place to fund future closure and post-closure costs, as discussed in Section 3.3.5. The City of Lynchburg is the only one of the three landfill communities that has an existing dedicated closure and post-closure fund. R. W. Beck would emphasize that in order for the City to realize a zero net liability, the City would need to transfer the savings amount to the Regional Entity. Table 3-6 summarizes the amounts of these liabilities.

[2] R. W. Beck calculated this liability based on the volume of waste in place ,and would recommend that this methodology be used in the future if there is a need to update this liability. Furthermore, using a volumetric approach, as opposed to based on surface area, is strongly recommended.

Table 3-6
Closure and Post-Closure Summary of Existing Liabilities and Savings by Landfill

Landfill	Gross Liability	Savings	Net Liability
City of Lynchburg	$4,768,172	$4,768,172	$0
Campbell County	$2,359,208	$0	$2,359,208
Amherst County	$1,530,671	$0	$1,530,671
Total	$8,658,051	$4,768,172	$3,889,879

3.4.3 Existing Closed Landfills

Both Campbell County and the City of Lynchburg have closed landfills that are located next to the open landfills. Campbell County and the City of Lynchburg continue to incur monitoring and/or remediation costs associated with these landfills. R. W. Beck has excluded these liabilities and costs from this analysis, which means that each individual participating community will be responsible for future costs associated with these existing closed landfills.

3.5 Asset and Liability Summary

For each of the three landfills, R. W. Beck developed a summary table that lists each asset and liability based on the categories included in this section or the report.

Table 3-7
Asset and Liability Summary by Landfill

Assets/Liabilities	City of Lynchburg	Campbell County	Amherst County
Assets			
Site Improvements	$1,768,653	$516,471	$305,995
Landfill Capacity and Land	$2,947,112	$1,096,017	$1,441,851
Buildings	$42,766	$175,305	$116,963
Equipment and Rolling Stock	$674,562	$541,507	$29,710
Closure and Post-Closure Reserve Funds	$4,768,172	$0	$0
Subtotal	$10,201,263	$2,329,300	$1,894,520
Liabilities			
Outstanding Debt	($3,718,252)	$0	($1,089,337)
Closure	($1,705,786)	($1,633,366)	($871,530)
Post-Closure	($3,062,386)	($725,842)	($659,141)
Subtotal	($8,486,423)	($2,359,208)	($2,620,008)
Net Assets	$1,714,840	($29,908)	($725,488)

Based on the information presented in Table 3-7, the City of Lynchburg should expect a net benefit of $1.71 million, while Campbell County and Amherst County will have to contribute an additional $29,908 and $725,488, respectively. Lynchburg has the largest net asset value primarily due to the funding of its financial assurance liability. Since Campbell and Amherst have chosen to use the local government financial test in the past, it has not funded its liability. Although Campbell County and Amherst County will receive no cash payment for its assets, by contributing $29,908 and $725,488, respectively, they will be able to fully fund their financial assurance liability and pay off any remaining debt associated with landfill operations.

Table 3-7 shows the total assets, liabilities, and net assets for the three communities. Theoretically, there would be a series of transactions back and forth between the Regional Entity and the three communities, as follows:

- The Regional Entity would issue debt for the value of the communities':
  - Site improvements;
  - Landfill capacity and land;
  - Buildings; and
  - Equipment and rolling stock.
- The Regional Entity would transfer all proceeds of the debt issuance to the participating communities.
- The participating communities would then pay off all outstanding debt.
- Each community would then transfer both its financial assurance liability and the associated cash reserve to the Regional Entity. However, since Campbell County and Amherst County have no financial assurance cash reserve, they would need to transfer an amount equal to the financial assurance liability from other funding sources.

Rather than a series of transfers, Tables 3-8 and 3-9 show a more practical approach for the Regional Entity's debt issuance and the fund transfers between the parties. The net result is the same for both the Regional Entity and the participating communities. Table 3-8 examines the transaction from the Regional Entity perspective.

Table 3-8
Net Asset Transfer from Perspective of Regional Entity

Transaction	City of Lynchburg	Campbell County	Amherst County
Proceeds from debt issuance	$5,433,092	$2,329,300	$1,894,520
Proceeds transferred to communities	($664,920)	$0	($363,848)
Funds received from communities	$0	$29,908	$0
Net proceeds from debt and transfers to/from communities	$4,768,172	$2,359,208	$1,530,671
Transfer to Regional Entity financial assurance reserve	$4,768,172	$2,359,208	$1,530,671
Remaining cash	$0	$0	$0

[1] This amount represents the funds available for the financial assurance reserve fund.

After the above transactions, the Regional Entity is left with:

- Debt in the amount of $9,656,911;
- Ownership of the three landfills, including site improvements; landfill capacity and land; buildings; and equipment and rolling stock;
- Financial assurance liability totaling $8,658,051; and
- Financial assurance reserve equal to the financial assurance liability.

Table 3-9 examines the transaction from the perspective of the participating communities.

Table 3-9
Net Asset Transfer from Perspective of Communities

Transaction	City of Lynchburg	Campbell County	Amherst County
Funds received from Regional Entity	$664,920	$0	$363,848
Community keeps financial assurance reserve	$4,768,172	$0	$0
Community pays off its outstanding debt	($3,718,252)	$0	($1,089,337)
Community pays Regional Entity	$0	($29,908)	$0
Net proceeds of transaction	$1,714,840	($29,908)	($725,488)

Once it receives the funds in the amount of $363,484 from the Regional Entity for its assets, Amherst County will have to fund an additional $725,488 in order to pay off its outstanding debt of $1,089,377.

By transferring all the assets and funds listed in Table 3-9 to the Regional Entity, Campbell County will have fulfilled their financial assurance obligation of $2,359,208.

The City of Lynchburg can use its reserve fund to pay down its outstanding debt. The remaining funds, in combination with the payment from the Regional Entity, will total $1,714,840. Lynchburg will have transferred all its landfill assets (except for the financial assurance reserve) to the Regional Entity, and fulfilled all the liabilities listed in Table 3-7.

After the transaction, none of the three communities will have a remaining financial assurance liability associated with closure and post-closure of the respective landfills. However, the communities would each still be liable for any environmental remediation efforts associated with the closed portions of the landfills. See Section 4.4 for more detail on this issue.

Section 4
Regional Entity Start-Up Costs, Annual Budget, and Other Financial Issues

Until establishment of the Regional Entity, the participating communities will continue to incur costs associated with the establishment of a regional disposal system. Once the Regional Entity is established, it will have its own operating budget. The purpose of this section is to describe and estimate these start-up costs and future annual budget. This section concludes with a discussion of other related financial issues.

4.1 Regional Entity Start-up Costs

Prior to the time when the Regional Entity begins operations, there will be a need to fund several tasks in order to transition to a regional system. Table 4-1 provides an overview of the estimated costs for these tasks. R. W. Beck would emphasize that these costs are provided as estimates only, and that specific scopes of work and budgets will need to be developed in order to provide more exact cost estimates. Furthermore, these cost estimates could change based on further direction provided by the Virginia Department of Environmental Quality concerning regulatory issues. Section 5 provides further detail concerning the regulatory and legal tasks. Section 2.5 details the hiring of initial staff.

Table 4-1
Regional Entity Start-up Costs

Task	Estimated Cost Range
Regulatory and Legal	
Transition Plan	$20,000 - $25,000
Proof of Concept Technical Proposal	$50,000 - $75,000
Petition Virginia DEQ for Designation as a Solid Waste Region	$5,000 - $10,000
Preparation of a Regional Solid Waste Management Plan	$35,000 - $100,000+
Apply for permit amendments	$20,000 - $30,000
Legally establish the Regional Entity and address related legal issues	To Be Determined
Subtotal	$130,000 - $240,000+
Hire initial staff	$155,000 - $170,000

R. W. Beck would recommend that the participating communities continue to fund start-up costs in the same manner used to fund the feasibility analyses completed to date for this project. This approach has involved each participating community funding a pro rata portion of all costs incurred.

4.2 Regional Entity Operating Budget for FY 2008

With significant input from the participating communities, R. W. Beck developed an operating budget for the Regional Entity. The budget is for fiscal year 2008, assuming that the Regional Entity will begin landfill operations approximately July 1, 2007. If operations do not begin at this time, future adjustments could be made when there is a better understanding of timing. Budget costs have been inflated by 2.5 percent annually to reflect cost increases that may occur over the next two years. Appendix A provides detailed schedules of the operating budget.

4.2.1 Personnel

The personnel portion of the budget is based on the staffing positions included in Section 2, which addresses the Regional Entity operations. Salaries were estimated based on the range of salaries being paid by the three landfill communities, then inflated to FY 2008. Estimated costs for benefits and overtime were based on historical costs for the communities, and specific discussions with VRS and insurance providers. R. W. Beck would mention that there is a likelihood that these cost structures may change in the future, given volatility in pension and insurance plan costs. The following summarizes costs included:

- Benefits:
  - Pension plan: 10 percent of total salaries
  - Health insurance: $382.50 per employee per month
  - Dental insurance: $11.50 per employee per month
  - Workers compensation insurance: $14,605 annually[1]
  - FICA: 7.7 percent of total salaries
- Overtime: 2 percent of total salaries
- Personnel Administration: $10,500 annually[2]

1 Per the Virginia Association of Counties (VAC), based on number and type of employees employed by the Regional Entity and the associated salaries.

2 Includes support services such as payroll and human resources assistance. R. W. Beck assumed that one of the participating communities would provide this support service for the Regional Entity on a fee basis. For example, Campbell County provides similar services for the Council's 10 – 12 employees for $4,000 annually. With a larger staff for the Regional Entity, this cost is estimated at $500 per employee, or $10,500 annually.

4.2.2 Active Landfill Operations and Maintenance

These costs were developed based on the current Lynchburg landfill operations and maintenance budget. With input from City of Lynchburg staff, R. W. Beck adjusted several budget line items to remove costs associated with the City's collection operation and closed landfill. The City of Lynchburg will still be responsible for these costs once the Regional Entity is formed. In addition, the following categories were added to the budget:

- Insurance: Includes liability and property insurance.
- Legal: Regulatory, contractual, and environmental issues; the budget estimate assumes that no major legal services are required. This cost was estimated at $12,000 annually based on input from multiple attorneys in Virginia that consistently work with regional solid waste entities.
- Consulting: Planning, financial auditing and management/financial services.
- Building and Equipment Leases: Lynchburg owns two buildings and an above ground fuel tank that it will not transfer to the Regional Entity. While the Regional Entity operates the Lynchburg landfill, the Regional Entity will lease these items from the City of Lynchburg. R. W. Beck estimated the annual cost for these buildings, improvements, and equipment at $29,311.[3]

4.2.3 Inactive Landfills Operations and Maintenance

For the landfills that will be inactive, R. W. Beck estimated the costs that would be required for functions such as environmental monitoring and maintenance, as follows:

- Leachate hauling: R. W. Beck assumed that each landfill would be able to dispose of leachate at the Lynchburg wastewater facility at a rate of $4.78 per 748 gallons. Campbell County will require disposal of approximately 1,274,000 gallons annually and Amherst will require disposal of approximately 2,100,000 gallons annually.
- Environmental monitoring: Monitoring of groundwater and landfill gas will continue for the inactive landfills based on the historical cost of this expense.
- Site operations and maintenance: Site operation includes the control of the leachate and landfill gas collection systems. Site maintenance includes maintaining vegetation, fences, erosion control features, and other general site maintenance. This expense is based on the historical cost at each landfill.

See Section 4.3.2 for a discussion on how these costs, as well as environmental remediation costs, will be shared between the communities and the Regional Entity.

[3] Represents the book value of the assets the Regional Entity will lease from the City of Lynchburg, divided by the number of years the Regional Entity will operate at the Lynchburg landfill.

4.2.4 Equipment

R. W. Beck estimated equipment costs based on the on the cost of acquiring the equipment from the participating landfills based on the values discussed in Section 3. R. W. Beck assumed the Regional Entity would purchase all landfill equipment currently owned by the participating landfills. However, the Regional Entity will only need the equipment listed in Table 2.14, plus some minor miscellaneous equipment not listed in the table. For equipment that is acquired but not needed by the Regional Entity, R. W. Beck assumed the Regional Entity would sell the equipment based on:

- Market value for primary landfill equipment (e.g., compactors, scrapers);
- Book value for other equipment with remaining life; or
- Salvage value for assets that have been fully depreciated.

R. W. Beck assumed that the Regional Entity would use the proceeds from equipment sales to fund a portion of the equipment acquisition costs. R. W. Beck estimated the book/salvage value of the equipment to be acquired by the Regional Entity as $1,245,779. R. W. Beck researched the market value of the equipment the Regional Entity would sell, using Machinery Trader, and assumed the Regional Entity would recover 75 percent of the market value.[4] R. W. Beck estimated $458,685 would be recovered from selling the equipment not needed by the Regional Entity, which leaves $787,094 for the Regional Entity to finance. R. W. Beck assumed the remaining amount would be financed with debt over a seven year period at five percent interest, which results in a debt service payment of $136,025 in FY 2008. Since the sale of the equipment will happen over a period of months, this approach may require some financial flexibility from the Regional Entity participating communities. For instance, the participating communities may need to provide the Regional Entity a grace period to allow for the sale of the equipment and acquisition of the equipment debt before receiving payment for the equipment.

In addition to the annual payment for vehicle acquisitions, the Regional Entity will also need to set aside annual funds for equipment replacement. Based on the estimated cost and schedule of replacing equipment, R. W. Beck estimated the Regional Entity would need to budget $432,571 in FY 2005 for equipment replacement. The bar graph in Figure 4-1 shows the annual amounts the Regional Entity should budget for equipment acquisitions and replacement in the first eight years. Each year both the budget for the equipment acquisition and equipment replacement were increased by an inflation rate of 2.5 percent. The line graph in Figure 4-1 represents R. W. Beck's estimate of the equipment replacement cost each year, which increases during the first several years then levels off and remains relatively constant.

[4] As a conservative measure, R. W. Beck estimated that the Regional Entity would only recover 75 percent of market value. The Regional Entity may need to sell some equipment at equipment auctions or through equipment brokers that receive a portion of the sale price as commission.

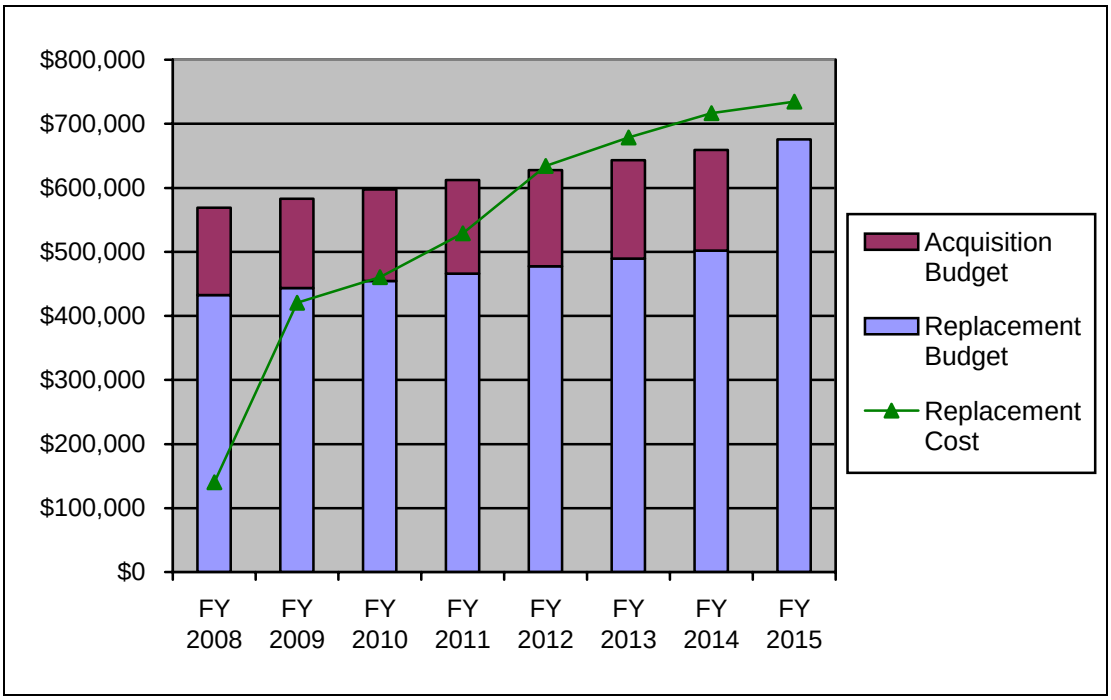

Figure 4-1: Vehicle Acquisition and Replacement Financing

In FY 2015, when the vehicle acquisition debt is retired, the Regional Entity should transition the funds previously used for the original equipment acquisition to the equipment replacement fund. R. W. Beck assumed that when equipment reaches the end of its depreciable life, it will be immediately replaced. However, the Regional Entity may be able to use some pieces of equipment for additional years before purchasing a replacement. Therefore the Regional Entity may experience lower equipment replacement costs than what R. W. Beck estimated.

4.2.5 Capital

The Regional Entity will also have annual debt service associated with all non-equipment capital acquired from the participating landfills and planned capital improvements. This capital includes:

- Existing capital (as detailed in Section 2)
  - Existing site improvements
  - Land and landfill capacity
  - Buildings and structures
- Future landfill development (as detailed in Section 2)
  - Cell or phase excavation and development
  - Access roads and other site infrastructure

- Other capital improvements for use as regional landfill (as detailed in Section 2.10)
  - New scale house or scale house improvements
  - Site entrance improvements
  - Surrounding roadway improvements
  - Other new building or structure improvements
  - Interim protective cap on portions of the landfills that will no longer accept waste and stormwater management improvements ("mothballing" costs)

Table 4-2 provides the financing scenario R. W. Beck would recommend to provide the most even distribution of debt service over the life of the three landfills.

Table 4-2
Debt Associated with Capital Improvements

Description	Year Financed	Amount Financed [1]	Finance Term (Yrs)	Annual Payment
All existing capital assets [2]	2008	$8,411,132	5	$1,942,759
Lynchburg development costs	2008	$2,202,444	5	$508,709
Campbell mothballing costs	2008	$348,053	17	$30,872
Amherst mothballing costs	2008	$330,050	17	$29,275
Campbell development costs	2013	$15,106,220	8	$2,337,262
Campbell site improvements	2013	$1,826,093	8	$282,536
Amherst development costs	2021	$1,737,958	4	$490,125
Amherst site improvements	2021	$3,132,666	4	$883,449

[1] The amount shown is adjusted for inflation based on the year financed.

[2] Includes existing site improvement, landfill capacity and land, and buildings at all three landfill sites.

By issuing the debt as shown in Table 4-2, the Regional Entity will have the annual capital debt service amounts shown in Table 4-3.

Table 4-3
Capital Debt Service Summary

Operating Years	Annual Capital Debt Service
1-5	$2,511,616
6-13	$2,679,945
14-17	$1,433,721

The first five operating years represents the time the Regional Entity is operating the Lynchburg landfill. The annual capital debt service in the first five operating years is $2,511,616. During the next eight years, which represents the approximate time the

Regional Entity operates the Campbell County landfill, the annual capital debt service is $2,679,945. During the later years, when the Regional Entity operates at the Amherst County landfill, the annual capital expense amount decreases to $1,433,721. Although the annual capital expense devoted to the existing facilities will decrease in the later years, the Regional Entity may need to fund additional capital expenditures related to its future disposal capacity. Therefore, the overall budget amount for capital expenditures may not decrease.

4.2.6 Financial Assurance

The three participating communities will be responsible for all financial assurance liabilities accrued up through July 1, 2007. The Regional Entity will assume all financial assurance liabilities accrued from July 1, 2007 until the three landfills reach closure.

R. W. Beck assumed the annual budget would include financial assurance for the landfill that is accepting waste. For instance, during the first several years when the Regional Entity operates the City of Lynchburg landfill, the budget should include financial assurance of $372,755, which is the annual amount the Regional Entity should save to fully fund closure and post-closure at the Lynchburg landfill. If the Regional Entity accepts 262,264 tons of waste, the financial assurance amount equates to $1.42 for every ton accepted. When the Regional Entity transitions to the Campbell County landfill, the budget will include the financial assurance required to fund the Campbell County landfill closure and post-closure. The Regional Entity should adjust disposal rates to account for the changes in financial assurance.

The City of Lynchburg has chosen to fully fund its financial assurance liability and will be able to transfer those funds to the Regional Entity. Campbell County and Amherst County have chosen to use the local government financial test to satisfy the financial assurance requirements and therefore its liability is unfunded. The Regional Entity's participating members must decide how Campbell County and Amherst County will reimburse the Regional Entity for the unfunded liability.

4.2.7 Reserve Funds

R. W. Beck recommends the Regional Entity create (1) operations and maintenance and (2) capital reserve funds.

Operations and Maintenance Reserve Fund

The purpose of the operations and maintenance reserve fund would be to financially prepare the Regional Entity for any unbudgeted expenses that may occur in the future. R. W. Beck would recommend a fund based on three months of the operating and maintenance (O&M) portion of the annual budget (total budget minus capital expenses). For the FY 2008 budget, this amount would equal $692,199.[5] In order to

[5] The total O&M budget equals personnel budget ($948,407) plus the O&M budgets at the active landfill ($1,348,158) and inactive landfill ($99,458) plus the annual financial assurance ($372,775). Three months O&M = (3 months/12 months) x ($948,407 + $1,348,158 + $99,458 + $372,775) = $692,199

minimize the rate impact of building this reserve, R. W. Beck would recommend accumulating the O&M reserve over a five year period through a fee added to the disposal cost. Over a five year period, the Regional Entity would need to fund $138,440 annually. This represents approximately $0.53 per ton of waste disposed.[6]

Capital Reserve Fund

The capital reserve fund is typically a required term for issuing debt. In many cases, revenue bonds will require that the payee have an amount equal to one year of principal and interest payments. R. W. Beck would recommend that the Regional Entity base the reserve amount on the average capital expense over the life of the three landfills. Based on this, the total capital reserve amount is $2,642,403.[7] The primary methods for funding the capital reserve fund are (1) debt, (2) a fee added to the disposal rate, and (3) excess revenue. At this time, R. W. Beck would recommend that the Regional Entity fund the entire amount with debt and finance it over the life of all three landfills.

Table 4-4
Reserve Fund Recovered through Disposal Rate

Description	Amount
Total capital reserve	$2,642,403
Finance term (years)	17
Annual debt service funded through disposal rates	$234,379
Total annual tonnage	262,264
Amount contributed to reserve per ton of disposal	$0.89

The Regional Entity could later choose to use any excess revenue generated to more quickly pay off the debt associated with the capital reserve. The figures described in Table 4-4 are estimates calculated by R. W. Beck. Requirements from bond issuers may differ from the assumptions made by R. W. Beck and could therefore change the amount of the capital reserve and the manner in which it is funded.

4.2.8 Potential Environmental Remediation

The Regional Entity has responsibility for the unused portions of the landfills once it assumes control in July 2007. At some point over the operating life of the three landfills, the Regional Entity may face an unexpected expense associated with the remediation of an environmental issue.

[6] $138,440 / 262,264 tons = $0.527 per ton

[7] This amount represents the annual debt service if all anticipated capital acquisitions, capital improvements, and landfill development costs were financed at July 2007 for 17 years at a five percent interest rate.

R. W. Beck recommends the Regional Entity establish a financial policy for addressing any of its potential future environmental remediation responsibilities. R. W. Beck identified two primary options for the Regional Entity:

- The Regional Entity could purchase an environmental insurance policy from VAC. VAC estimated the premium for $1,000,000 in coverage with a $50,000 deductible would cost $50,000 per year. If the Regional Entity were to decide to purchase the environmental insurance policy, it should work with VAC to get a detailed quote for the policy.
- The Regional Entity could choose to establish a separate reserve fund to address potential environmental remediation issues. The Regional Entity would need to determine the annual contribution to the reserve.

The advantage of the insurance policy is that the Regional Entity would be insured up to the coverage limit regardless of when an environmental issue occurs. However, if no environmental remediation issues occur at the landfills, the Regional Entity would have expensed $50,000 annually. Assuming the landfills operated for 17 years and the Regional Entity paid $50,000 per year, this would amount to $850,000 over the life of the landfills.

The advantage of the reserve fund is that if the Regional Entity experiences no environmental remediation issues, the funds in the reserve would be available for the Regional Entity to use for other purposes or to distribute to the participating communities. However, if an environmental remediation issue occurs and the expense exceeds the balance of the remediation fund, the Regional Entity would have to find other funding sources for addressing the environmental remediation.

R. W. Beck included $50,000 in the annual budget to account for potential environmental remediation. However, this amount may be to be adjusted by the Regional Entity once it makes a decision on how it would prefer to address this issue. One option is for the Regional Entity to use some portion of any excess revenue to more quickly build an environmental remediation reserve.

4.3 Summary of Annual Budget

This section summarizes the annual budget based on the information presented in Sections 4.1 and 4.2. Table 4-5 contains the FY 2008 budget for the Regional Entity

Table 4-5
Regional Entity Budget

Budget Category	FY 2008 Budget
Personnel	$948,407
Active Landfill O&M	$1,348,158
Inactive Landfill O&M	$99,458
Equipment	$568,596
Capital	$2,511,616
Financial Assurance	$372,775
Reserve Funds	$372,819
Potential Environmental Remediation	$50,000
Total	$6,271,829
Total Tons Accepted	262,264
Cost per Ton	$23.91

4.4 Preliminary Financial Summary

The following are the FY 2008 cost per ton estimates from Regional Solid Waste Management Analysis that R. W. Beck completed for Region 2000 in 2005. These costs per ton are based on the status quo operation and include tonnage accepted from BFI.

- City of Lynchburg: $24.64
- Campbell County: $33.36
- Amherst County: $41.92

Among the landfill communities, Campbell County and Amherst County will benefit the most from the lower cost per ton of the regional landfill. While the City of Lynchburg will also benefit from a lower cost per ton, the City also receives a significant up-front benefit from the transition of its assets to the Regional Entity.

The non-landfill communities, Nelson County and the City of Bedford, would also realize significant cost savings compared to their current transfer and disposal costs. Costs for FY 2008 for Nelson County would decrease from $59.25 per ton to $46.95 per ton, and from $92.13 per ton to $85.77 per ton for the City of Bedford.[8]

Based on the work completed throughout this report, R. W. Beck is able to develop preliminary estimates of the financial impact for each community that would participate in the regional approach.[9] Based on this analysis, all of the participating communities will achieve meaningful cost savings with the regional approach, as compared to their current programs. Nelson County and the City of Bedford would reduce their costs based on shorter hauling distances and lower tipping fees. The three landfill communities – Amherst County, Campbell County and the City of Lynchburg – would generate and share excess revenue achieved from more cost effective operations. The following table summarizes the estimated financial benefits by community.

Table 4-6
Estimated Financial Benefit by Community

Community	Annual Value (FY 2008)	Total Net Present Value (FY 2008 – 2024)
Amherst County	$361,971	$4,790,501
Campbell County	$852,047	$11,828,869
Nelson County	$167,319	$2,345,292
City of Bedford	$25,619	$370,952
City of Lynchburg	$643,112	$8,736,716

Notes
1. Amounts the landfill communities (Amherst County, Campbell County and the City of Lynchburg) are based on projected excess revenue and allocated by community relative to the projected amount of remaining airspace when the Regional Entity would begin operations. Amounts for Amherst and Campbell Counties are net of the incremental transportation costs. No incremental transportation costs were assumed for Lynchburg. The savings listed for these three communities are from excess revenue and do not include the additional benefit from a less expensive disposal rate.
2. Amounts for the City of Bedford and Nelson County reflect the projected decrease in tipping fees and reduced transportation costs.

4.5 Other Financial Issues

This section provides guidance concerning how the Regional Entity and the participating communities should address other financial issues that may need to be addressed in the future. This section was developed based on discussion with representatives from each participating community, and represents a consensus from those discussions.

[8] The status quo costs are based on the 2005 report and the costs as a part of the regional system are based on updating the 2005 report with the revised cost per ton amount developed in this report. Costs for Nelson County and the City of Bedford are higher than for the three landfill communities because of the transportation expenses, which include the need to long haul waste using transfer trailers.

[9] The financial analysis assumes that all communities and BFI would participate in the regional system in the future as they have in the past.

4.5.1 Sharing the Gas Payment Right at the Lynchburg Landfill

Based on discussion in Section 3.3.6, the Regional Entity and the City of Lynchburg will need to proportionally share the revenue generated by the gas payment right based on the contract that the City has with Lynchburg Gas Producers, LLC. The gas payment right should be paid based on the following methodology:

1. Lynchburg Gas Producers, LLC pays the gas payment right based on the landfill meeting the minimum quantity of gas collected annually;
2. The allocation of the gas payment right between the City and the Regional Entity should be based on the percentage of total waste in place. This percentage will change as the Regional Entity increases the amount of waste in the landfill.[10]

4.5.2 Activities at Closed Portions of Inactive Landfills

The Regional Entity will manage the environmental monitoring and site maintenance at the inactive landfills. The financial responsibility of these activities will be shared between the communities and the Regional Entity. The communities will be responsible for the amount attributable to the closed portions of the landfill.[11] The Regional Entity will be responsible for the amount attributable to undeveloped portions of the landfill. The communities and the Regional Entity will share the costs associated with areas of the landfill that have accepted waste, but have not been closed. The costs will be shared in these intermediate areas based on the percentage of the capacity used by the community when the Regional Entity is created. Table 4-7 summarizes the financial responsibilities.

[10] Here is a hypothetical example. Prior to the establishment of the Regional Entity, the City has disposed of 2,300,000 cubic yards of waste. During the first year as the regional landfill, the Lynchburg landfill receives 400,000 cubic yards. For this first year, the City would receive 85.2% of the revenue (2,300,000/2,700,000) and the Regional Entity would receive 14.8% (400,000/2,700,000). The percentages would change each year as the Regional Entity increases the amount of waste disposed.

[11] Closed portions of the landfill are those which no longer accept waste and where final cover has been placed.

Table 4-7
Financial Responsibilities at Inactive Landfills

Landfill Phase Status	Responsibility
Closed	Community that previously owned the landfill
Intermediate	Responsibility proportionally shared between community and Regional Entity based on amount of capacity used by when the Regional Entity is created.
Undeveloped	Regional Entity

4.5.3 Excess Revenue or Short-Term Deficits

As mentioned in Section 4.2.7, the Regional Entity should use some portion of excess revenue to fund a portion of the reserve fund. The amount not allocated to the reserve funds should be allocated to the participating communities. One option would be to allocate the excess funds based on the amount of available airspace that each landfill participating community would bring to the Regional Entity.

4.5.4 Payments for Disposal

Local governments currently fund their disposal costs either through their general fund or as a direct fee by customers. In the transition to the regional system, each local government will need to pay for the quantity of waste that will be disposed of in the landfill from its collection vehicles and/or convenience stations.

The participating communities' managers agreed in principal on R. W. Beck's recommendation that each individual community pay a fee based on the tonnage brought to the facility based on the established member community disposal rate. Each local government would need to decide whether it would fund this expense either through rates, assessments or the general fund. The Regional Entity should bill the participating communities on a monthly basis.

4.5.5 Establishing the Disposal Rate

The participating communities' managers agreed in principal on R. W. Beck's recommendation that the participating communities pay a rate based on the cost of service information provided in this section of the report. The cost of service should be periodically reviewed by the Regional Entity staff or by an independent third party (e.g., consulting firm).

Non member local governments and private companies would pay a "market rate," which could vary based on quantity and time periods. The Regional Entity could also consider inter-local agreements and contracts with these entities.

4.5.6 Participation by Additional Communities

In the future, there may be other communities that express an interest in joining the Regional Entity. If this occurs, having a policy in place of how to address this would be beneficial. The Regional Entity will require the interested community to fund an analysis that would evaluate the financial and operational feasibility of their participation. The Regional Entity would select the consultant to develop the analysis. If it is feasible, the Regional Entity would require the prospective member to pay a pro rata fee of all expenses to date related to the feasibility and establishment of the Regional Entity.

4.5.7 Future Use of Reserve Funds

After the existing landfills reach capacity and the Regional Entity determines that no future liabilities will occur, the need may exist to decide how to use remaining reserve funds. These reserve funds should be used in the following priority order:

1. Fund development costs associated with the next solid waste management system (e.g., development of a new landfill and/or transfer station)
2. Refund reserve amounts to the participating communities based on the total quantity of waste disposed of in the Regional Entity's landfills, or based on the same method the Regional Entity decides to distribute excess revenue.

Section 5
Regulatory and Legal Issues

Section 5 evaluates regulatory issues associated with how to implement the joint use of existing facilities in a regional approach. This analysis is based on R. W. Beck's research, as well as multiple meetings and discussions between the Virginia Department of Environmental Quality (DEQ), the Council and participating communities. The purpose of this section is to summarize key regulatory issues and to describe the current understanding of regulatory actions that will be required in order for the regional approach to continue progressing. This section concludes with a discussion of legal steps that would need to be completed in order to establish the regional entity.

5.1 Regulatory Issue Overview

As a part of this project, there is a need to obtain a specific understanding of actions that will be required by the Virginia DEQ in order for the landfills to remain compliant with State of Virginia solid waste regulations – particularly those concerning the timing of landfill closure. This issue is addressed in the Virginia Solid Waste Management Regulations 9 VAC 20-80, Section 250 E.4. It states that closure of a "unit" is required to begin "no later than 30 days after the date on which the unit receives the known final receipt of wastes, or if the unit has remaining capacity and there is a reasonable likelihood that the unit will receive additional wastes, no later than one year after the most recent receipt of wastes."

Most importantly, this section goes on to state that, "extensions beyond the one-year deadline for beginning closure may be granted by the director if the owner or operator demonstrates that the unit has the capacity to receive additional wastes and the owner or operator has taken and will continue to take all steps necessary to prevent threats to human health and the environment from the unclosed unit."

This will be an issue for the Campbell and Amherst County landfills since these facilities will be inactive or dormant for a period since only one landfill will be actively accepting waste at the same time under the preferred approach, beginning with the City of Lynchburg landfill. Since there will be a time period when the Campbell and Amherst County landfills are not actively accepting waste, decisions will need to be made concerning whether these landfills will need to temporarily "close" even though they will accept waste in the future.

5.2 Proposed Regulatory Approach Concepts

The Council and participating communities are specifically requesting the use of an approach that would involve an extension beyond the one-year deadline from the DEQ

for beginning closure of the Amherst and Campbell County landfills. In making this request, the Council emphasizes that all steps necessary to prevent threats to human health and the environment from the unclosed unit will be taken.

For both the Amherst and Campbell County landfills estimates have been developed on the area that will not receive the permitted final cover system at the time the facility becomes dormant or inactive. These areas are 13.25 acres for Campbell County and 12.50 acres for Amherst County. These estimates however do not specifically consider filling plan adjustments at both facilities in order to maximize the area that reaches final grades prior to becoming inactive.

There are two potential options that could be implemented: (1) soil-based approach and (2) synthetic cap approach, as described in the following sections. The Council, subject to regulatory approval by DEQ, will need to decide which option it would like to pursue. R. W. Beck would recommend that decisions be made concerning which approach to pursue based on the overall cost and likelihood of approval by DEQ, which may require some level of technical review and analysis before a final decision is made.

5.2.1 Soil-based Approach Option

The Council initially proposed placing a soil cover, consisting of a minimum of 12-inches of low permeability (on-site) soil, over the portions of the landfill that would receive waste in the future, including a vegetative cover (i.e., grass similar to the closed landfills). In addition, all required environmental and maintenance efforts (e.g., gas, groundwater, leachate, stormwater, erosion control) would continue. The following summarizes key aspects of this plan:

- Permanent closure of areas of the landfills that have reached final grade and are not anticipated to receive additional waste in the future.
- Placing a minimum of 12-inches of on-site low-permeability soil over the portions of the landfills that would receive waste in the future.
- Placing a layer of soil capable of sustaining a vegetative cover during the inactive period (i.e., grass similar to the closed landfills).
- Several permanent staff will be assigned responsibility for maintaining the inactive sites to ensure that proper grading is in place and to repair any erosion, or other damage to the cap caused by burrowing animals, subsidence, etc., in a timely manner.
- In the event that any precipitation does enter the inactive landfills, it will be collected through the facilities' existing leachate collection systems. The collected leachate will be disposed of through the City of Lynchburg's wastewater system.
- Increase the size of stormwater collection systems as necessary in order to accommodate the proper handling of any additional runoff.
- In addition, all cells at these landfills do have Subtitle D lining systems to minimize leachate leaks and groundwater contamination.

Table 5-1 summarizes the projected direct costs associated with this option.

Table 5-1
Cost for Soil-based Approach

	Quantity	Unit	Unit Price	Total Price
Campbell County				
Intermediate Cover [1]	21,377	CY	$2	$42,754
Topsoil	12,024	CY	$5	$60,120
Vegetation (i.e., seeding)	13.25	AC	$1,500	$19,875
Landfill Gas Control [2]	13.25	AC	$7,500	$99,375
Stormwater Improv. [3]	1	LS	$25,000	$25,000
Subtotal				$247,124
Amherst County				
Intermediate Cover	20,167	CY	$2	$40,334
Topsoil	10,083	CY	$5	$50,415
Vegetation (i.e., seeding)	12.5	AC	$1,500	$18,750
Landfill Gas Control [2]	12.5	AC	$7,500	$93,750
Stormwater Improv. [3]	1	LS	$25,000	$25,000
Subtotal				$228,249
Total				$475,373
Contingency Range – Low [4]				$380,298
Contingency Range – High [4]				$665,522

1. Assumes placement of 12 inches of low permeability soil over 6 inches of daily cover.
2. Assumes passive system installed to control gas build-up beneath the cover system.
3. Required to upgrade existing facilities to handle the increased run-off from areas with the Interim Protective Cover. Estimate assumes increasing ditch and pond capacity and/or installing temporary detention ponds.
4. Assumes that the actual cost of installation will fall between minus 20% and plus 40% of the planning level estimate. Contingency accounts for factors such as inflation and whether the work is performed by Landfill Operations or by a third-party contractor.

While the cost estimate for this approach is lower than the cost estimate for the synthetic cap approach, the cost for the soil based approach could increase due to the level of regulatory review, which could involve multiple demonstrations, that DEQ may require in order for this approach to be approved.

5.2.2 Synthetic Cap Approach

As an alternative to the approach described in Section 5.2.1, DEQ suggested that the Council consider an approach that would rely on a synthetic cap. This approach would still be considered a variance, and may include the following details:

- 5 ounce per square yard (oz/sy) woven FML (flexible membrane liner placed on top of 12 inches of non-engineered soil
- FML panels should overlap side to side and down slope; while overlaps may be seamed with duct tape, they do not need to be welded
- The FML should be anchored with sand bags or tires to protect from wind uplift

- Gas would still need to be managed to prevent buildup of gas pressure beneath the FML
- Increased runoff from the FML may require modifications to storm water control features, such as drainage ditches

In addition, there would also be a need to manage the synthetic cap, which would include, at a minimum, the following efforts:

- Permanent staff will be assigned responsibility for maintaining the integrity of the synthetic cap – repairing damage, replacing ballast materials, and repairing areas of subsidence for positive drainage, in a timely manner.
- Depending on the length of time the FML is used, the FML may need to be replaced before the inactive area is reopened for use.
- Maintain stormwater drainage features free of debris and sediment buildup.
- In addition, all cells at these landfills do have Subtitle D lining systems to minimize leachate leaks and groundwater contamination.

Table 5-2 summarizes the projected direct costs associated with this option.

Table 5-2
Cost for Synthetic Cap Approach

	Quantity	Unit	Unit Price	Total Price
Campbell County				
Subgrade Preparation [1]	10,688	CY	$2	$21,376
5 oz/sy Woven FML [2]	577,170	SF	$0.20	$115,434
Landfill Gas Control [3]	13.25	AC	$7,500	$99,375
Stormwater Improv. [4]	1	LS	$50,000	$50,000
Subtotal				$286,185
Amherst County				
Subgrade Preparation [1]	10,083	CY	$2	$20,166
5 oz/sy Woven FML [2]	544,500	SF	$0.20	$108,900
Landfill Gas Control [3]	12.5	AC	$7,500	$93,750
Stormwater Improv. [4]	1	LS	$50,000	$50,000
Subtotal				$272,816
Total				$559,001
Contingency Range – Low [5]				$447,201
Contingency Range – High [5]				$782,601

1. Assumes placement of 6-inches of soil over areas to receive the interim protective cap. Soil provides suitable subgrade for placement of FML. Unit cost assumes soil available from on site sources (i.e., material cost = $0).
2. Unit cost includes seaming of panels and placement of ballast.
3. Assumes passive system installed to control gas build-up beneath the cover system.
4. Required to upgrade existing facilities to handle the increased run-off from areas with the Interim Protective Cover. Estimate assumes increasing ditch and pond capacity and/or installing temporary detention ponds.
5. Assumes that the actual cost of installation will fall between minus 20% and plus 40% of the planning level estimate. Contingency accounts for factors such as inflation and whether the work is performed by Operations or by a third-party contractor.

The projected cost for the synthetic cap approach could vary depending on how long the synthetic membrane lasts at each facility. It is estimated that the FML may last three to five years, or longer, depending on the level of environmental impacts, such as wind, rain, etc., and the frequency of maintenance. The current cost estimate is based on installing a FML once at the Campbell and Amherst County landfills. While the materials cost of the synthetic cap approach is likely to be higher than for the soil-based approach, DEQ may not require the level of engineering-based demonstrations for the synthetic cap approach, since they have approved similar approaches at other landfills.

5.2.3 Regulatory Steps to Seek Approval for the Cap

Once the Council decides whether it would like to pursue the soil-based or synthetic cap approach, there will be a need to pursue a series of regulatory approvals. During discussions with the Council, DEQ has expressed a willingness to work with Region 2000 concerning the proposed regional approach. However, DEQ did emphasize that the requested approach is atypical, and will require careful consideration before approval. DEQ would like for a process to be developed as a model/pilot in case there would be an interest by other landfills to consider a similar approach in the future. Region 2000 will need to take a number of steps in order for DEQ to be able to approve the approach.

Develop Workgroup to Establish Schedule and Requirements

Based on a suggestion by DEQ staff, the Council, participating communities and DEQ agreed in principal to form a workgroup that would facilitate review of the technical merit of the concept as it evolves. An objective of this workgroup would include developing a schedule and clarifying specific requirements to complete this regulatory process. R. W. Beck would expect that a project schedule could only be developed based on this type of discussion with DEQ since they will need to approve many of the steps discussed in this section. On a preliminary basis, 24 -36 months may be required to take the steps necessary to establish the Regional Entity.

Transition Plan

Prior to implementing any regional approach, all three landfills should make a concerted effort to have as much area of active cells reach final grade in order to minimize the area that would be subject to an interim cover. Region 2000 would need to develop a transition plan that describes how this will occur. This plan would specifically need to document areas that would receive final closure cover, areas that would be subject to the interim cover, as well as site grading plans.

It has been estimated that the cost to develop this plan would be in the range of $20,000 to $25,000.

Proof of Concept Technical Proposal

Region 2000 would need to develop a plan that would detail how the interim cover approach would be implemented and managed throughout the time period when the landfills are inactive. DEQ would review this proposal, and upon approval, issue a

letter stating their agreement in principal to the concept. This plan would need to include the following for the Amherst and Campbell County landfills:

- Detail how the interim cover would be implemented
- Detail how the interim cover would be maintained (e.g. staff efforts to manage the sites, detail specific actions that would occur on a consistent basis)
- Commit to financial assurance, with the understanding that post-closure would not begin until all existing and future cells reach final closure. Region 2000 also needs to recognize that closure standards could change in the future, and that the landfills would be subject to future regulatory changes.
- Efforts to minimize gas and odor issues
- Commit to proper management of leachate system (e.g. detail frequency of hauling leachate, ensure no excessive leachate build-up)
- Provide adequate site security measures
- Aesthetics (e.g. create new or improve/maintain existing buffers, reduce visibility from outside the landfill, grade to blend with surrounding geography)
- Proposed schedule of when each landfill would be active/inactive
- Quantify how much area would be subject to the interim cover
- Configuration of the sites
- Demonstrate how it would minimize potential negative impacts to groundwater, surface water and air quality
    - HELP model
    - Minimize infiltration by sloping interim cover areas
    - Description of how materials (e.g. soil) would perform

There would also be a need to address how each landfill, when operating as the regional disposal facility, would accommodate the increase in tonnage. Issues to be addressed would need to include but not be limited to overall operations, staffing, equipment, daily cover, traffic and capacity projections. Section 2 of this report has addressed many of these issues, and could be modified to specifically meet DEQ's needs, as necessary.

It has been estimated that the cost to develop this plan would be in the range of $50,000 to $75,000.

Public Involvement

Involving the public as a part of this process was stressed as an important concept by DEQ. While the Council and participating communities would specifically expect to involve the public during the development of a regional plan, there is also a recognition that further efforts will occur during the process to provide meaningful public involvement.

5.3 Further Regulatory Requirements

Based on multiple discussions between the DEQ and Region 2000, there is a preliminary understanding of the steps that would be required to undertake the regional approach that would involve the mothballing of the Campbell and Amherst County landfills.

Given the complex technical and regulatory issues involved, R. W. Beck would recommend that the Council seek assistance from qualified solid waste management consultants. For this reason, cost estimates for various consulting services have been included in the following discussions.

5.3.1 Regional Solid Waste Planning

Any potential approval of a variance for delaying closure would need to occur as part of a comprehensive effort to implement regional solid waste management. The first step is to petition the DEQ for designation of the participating communities as a region for solid waste management and planning purposes. The next step would involve development of a regional solid waste management plan.

Petition Virginia DEQ for Designation as a Solid Waste Region

The participating communities wishing to form a region for the purposes of joint solid waste management and planning must petition the Director of DEQ for designation as a region for joint development of a solid waste plan. The following items, set forth in 9VAC20-130-200, shall be considered by the Director in evaluating the request for designation as a region:

- Geographic areas or jurisdictions have a history of cooperating to solve problems in environmental or other related matters;
- Existing regional management systems, authorities or similar institutions;
- The size, configuration and location of the regional area should have sufficient solid waste contribution and market availability to support the solid waste management system;
- Solid waste types within areas and mutuality of solid waste management interests;
- Geologic, hydrologic, soil and groundwater conditions; availability of land and soils; and natural barriers and ecosystems; and
- Existing planning areas established for purposes other than solid waste management including the existence of informational databases containing data related to that need for solid waste management planning.

If the proposed region meets these standards, the Director shall approve the request for designation as a region for solid waste management and planning.

It has been estimated that the cost to develop this plan would be in the range of $5,000 to $10,000, assuming a relatively straight forward process

Preparation of a Regional Solid Waste Management Plan

Section 10.1-1411 of the Code of Virginia states, "The governing bodies of the counties, cities and towns within any designated region shall be responsible for the development and implementation of a comprehensive regional solid waste management plan in cooperation with any planning district commission or commissions in the region."

Based on input from the DEQ, the regional plan would need to emphasize the following:

- Demonstrate a commitment to recycling and other diversion efforts (e.g., household hazardous waste, brush, white goods)
- Explain how cost savings from more efficient landfill operations would enhance opportunities to optimize integrated solid waste (e.g., redirect funds to recycling programs)
- Detail how disposal needs will be addressed on a 20 year planning horizon, which would address disposal needs after all three existing landfills would reach capacity
- Providing the public with the opportunity to provide comments will be an important step throughout this process.

R. W. Beck would emphasize that work product from this report, as well as the previous Phase I report, can serve as a basis for certain sections of the regional plan. Cost estimates for a regional solid waste management plan can vary widely based on factors such as the types of issues to be included (disposal, collection recycling, etc.) level of detail to be addressed and number of project and public meetings. Based on this wide range, costs for regional plans can range from $35,000 to more than $100,000.

5.3.2 Permit Amendments

DEQ stated that permit amendments would be required for each of the three landfills. Issues that would need to be addressed could include but not be limited to the following:

- Change in ownership or operational control
- Equipment upgrade or replacement
- Changes to interim compliance dates
- Changes to final compliance dates
- Changes in procedures to the Landfill Operating Plan
- Management of different waste
- Increase in average daily volume

A major permit amendment will be required to address material and substantial alterations to each permitted facility as a result of operating each landfill as part of a

regional solid waste system.[1] Table 5-3 outlines the components of the major permit amendments, and identifies which of the three landfill communities may be subject to specific permit amendments.

Table 5-3
Permit Amendment Summary by Landfill

Permit Amendment	Amherst	Campbell	Lynchburg
Design Plans [1]			
Site Topography Plan showing anticipated appearance and contours of the site at time the landfill is "mothballed"	✓	✓	
A series of cross sections showing the "mothball" topography and final grading at closure	✓	✓	
Detailed drawings and typical sections of the "interim protective cap"	✓	✓	
Detailed drawings and typical sections of any drainage control facility improvements associated with installation of the "interim protective cap"	✓	✓	
Update the Closure Plan to include revised time schedules for closure	✓	✓	✓
Update the Operations Manual			
Include the municipalities and collection agencies to be served by each facility	✓	✓	✓
Indicate the quantities of waste to be disposed at each landfill	✓	✓	✓
Provide detailed instructions to the site operator for all aspects of operation to occur during the inactive period, specifically related to the "interim protective cap"; it's assumed that all operations that occur during active periods will continue during inactive periods	✓	✓	

1. Only plans of substantive information are listed; other plans may be required, such as a title sheet

Following review and comparison of closure and post-closure cost estimates for each landfill, these estimates may need to be updated to reflect consistency between the landfills for common tasks, such as: installation of geomembrane; placement of cover soil; or hydroseeding. It is assumed that:

- there is no change to the design of permitted cells, including base (or liner) and final grades; and thus, no change to the permitted capacity of each phase, cell, or trench; and
- there is no change to the current environmental monitoring schedule (frequency of monitoring) regardless of whether the landfill is actively being filled, or inactive ("mothballed").

[1] During the life of each facility, other permit amendments associated with typical landfill design, operation, closure, post-closure care, environmental monitoring, etc. will still be required as part of the normal process for landfill management in the Commonwealth of Virginia.

It is estimated, based on the information identified above to be included in the major permit amendment, that the information could be prepared in 60-120 days, including periods for review of the information by the Council and participating communities. This assumes that any survey data required to prepare plans will be available at the commencement of work.

The Director has 90 days after the notification request to review the submitted information and determine whether it is adequate to formulate a decision. If the information is found to be inadequate, additional information must be submitted within 30 days of the request by the Director. The 30-day period may be extended. The Director will either: (1) approve the amendment request, with or without changes, and draft a permit amendment accordingly; (2) deny the request; or (3) approve the request, with or without changes, as a temporary authorization having a term of up to 180 days. Temporary authorizations may be approved for up to one additional term of 180 days.

The regulations do not speak to the amount of time the Director has to issue a decision if additional information is requested and after it has been received.

It has been estimated that the cost to prepare the amendments would be in the range of $20,000 to $30,000. The total cost would depend on subsequent requests by DEQ for additional research, demonstrations and/or submittals. Furthermore, this cost estimate is provided only for planning purposes, and the actual amount required could changed based on direction from the DEQ.

5.4 Legally Establish the Regional Entity and Address Related Legal Issues

There will be a need to resolve various legal issues prior to the establishment of the Regional Entity. Examples of legal issues to be addressed could include but not be limited to:

- Execution of a memorandum of understanding between the participating communities to formally commit them to this process.
- Legal structure of the Regional Entity (e.g. part of the Region 2000 Partnership, regional authority, etc.).
- Evaluate what mechanisms will be required to hold the landfill communities legally responsible for future costs associated with the closed landfill sections of portions of the landfills that have already received waste.[2]

[2] When the Regional Entity is established, it will become the official permit holder and owner of the landfills. Because DEQ has stated they will not "split" permits between active and closed portions, there is a need to develop the legal documents that will hold the landfill communities legally responsible for future costs associated with the closed landfills of portions of the landfills that have already received waste.

- Establish the mechanism to ensure that adequate financial assurance is provided for the landfills that may not be able to fund the current closure and post-closure liability.

While the legal issues to be addressed may be relatively straight forward, due to the need for coordination between the participating communities and the potential need for public involvement, this task may require one year. This time frame was based on discussions with multiple Virginia law firms. Cost estimates for this task would need to be provided by law firms that have experience in this field as part of a formal procurement.

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Appendix A

Annual Budget

Annual Budget

Schedule 1 - FINAL

Budget Categoty	FY 2008	Regional Entity
Personnel	Total Budget	Budget
Salary	$677,364	$677,364
Benefits	$257,495	$257,495
Overtime	$13,547	$13,547
Personnel Subtotal	**$948,407**	**$948,407**
Active Landfill O&M		
Contractual Services	$719,249	$719,249
Supplies & Materials	$272,972	$272,972
Gas/Diesel Fuel	$205,224	$205,224
Rentals & Leases	$5,399	$5,399
Utilities & Natural Gas	$19,150	$19,150
Training & Meetings	$11,431	$11,431
Misc. Expenses	$20,642	$20,642
Payments to Other Entities	$94,091	$94,091
Active Landfill O&M Subtotal	**$1,348,158**	**$1,348,158**
Inactive Landfill O&M		
Leachate Disposal	$23,219	$23,219
Environment Monitoring	$52,009	$52,009
Site Maintenance	$24,230	$24,230
Inactive Landfill O&M Subtotal	**$99,458**	**$99,458**
Landfill Equipment		
Equipment Acquisition and Replacement	$568,596	$568,596
Landfill Equipment Subtotal	**$568,596**	**$568,596**
Capital Expenditures		
Acquisition of Existing Capital, Landfill Development, Capital Improvements	$2,511,616	$2,511,616
Capital Expenditures Subtotal	**$2,511,616**	**$2,511,616**
Financial Assurance		
Closure	$133,358	$133,358
Post-Closure	$239,417	$239,417
Financial Assurance Subtotal	**$372,775**	**$372,775**
Reserve		
Operating Budget Reserve	$138,440	$138,440
Debt Service for Capital Expenditure Reserve	$234,379	$234,379
Reserve Subtotal	**$372,819**	**$372,819**
Environmental Remediation		
Environmental Remediation Insurance and/or Savings	$50,000	$50,000
Environmental Remediation Subtotal	**$50,000**	**$50,000**
Total Budget	**$6,221,828**	**$6,271,828**
Total Tonnage		262,264
Disposal Cost per Ton		$23.91

Personnel

Schedule 2 - FINAL

Position	FTE	Salary Range Low	Salary Range High	Average	FY 2008 Cost	Annual Cost
Management						
Director	1	$50,000	$65,000	$57,500	$61,921	$61,921
Environmental Compliance and Engineering Manager	1	$45,000	$60,000	$52,500	$56,537	$56,537
Business and Human Resources Manager	1	$35,000	$45,000	$40,000	$43,076	$43,076
Administrative Assistants	3	$20,000	$28,000	$24,000	$25,845	$77,536
Operations						
Operations Supervisor	2	$33,000	$41,000	$37,000	$39,845	$79,690
Scale House Attendant	2	$20,000	$28,000	$24,000	$25,845	$51,691
Equipment Operator II	2	$27,000	$33,000	$30,000	$32,307	$64,613
Equipment Operator I	4	$24,000	$27,000	$25,500	$27,461	$109,843
Site Maintenance Workers	4	$20,000	$24,000	$22,000	$23,692	$94,766
Mechanic	1	$30,000	$40,000	$35,000	$37,691	$37,691
Total	**21**					**$677,364**

Benefits				Amount	Basis	Annual Cost
Virgina Retirement System				10%	Salary	$67,736
Health Insurance				$382.50	Per employee, per month	$96,390
Dental Insurance				$11.50	Per employee, per month	$2,898
Workers Compensation				2.16%	Salary	$14,605
FICA				7.7%	Salary	$51,818
Overtime				2.0%	Salary	$13,547
Personnel Admintrative Costs				$500.00	Per employee, per year	$10,500
Total						**$257,495**

Total Personnel Costs	**$934,859**

Active Landfill Operation and Maintenance

Schedule 3 - FINAL

	FY 2008				FY 2005				
Operations and Maintenance Cost Type	Lynchburg Budget	Lynchburg's Responsibility	General Adjustment	Regional Budget	Lynchburg Budget	Lynchburg's Responsibility	General Adjustment	Regional Budget	Notes
Contractual Services									
Software Maintenance Service	$5,297	$0	$0	$5,297	$4,919			$4,919	
Communications M&R Service	$1,691	$0	$0	$1,691	$1,570			$1,570	
Building M&R Services	$12,944	($3,236)	$0	$9,708	$12,020	($3,005)		$9,015	(1)
Site Maintenance Services (grounds maintenance, woodwaste grinding, stormwater basin cleaning)	$151,128	$0	$5,384	$156,512	$140,337		$5,000	$145,337	(2)
Janitorial Services	$3,012	$0	$0	$3,012	$2,797			$2,797	
Med / Dental / Pharm / Lab Services	$215	$0	$0	$215	$200			$200	
Legal Services	$1,265	$0	$11,657	$12,923	$1,175		$10,825	$12,000	(3)
Auditing Services	$0	$0	$15,076	$15,076	$0		$14,000	$14,000	(4)
Architect / Engineering	$157,924	($77,167)	$0	$80,757	$146,648	($71,657)		$74,991	(5)
Professional Consulting Services	$0	$0	$43,076	$43,076	$0		$40,000	$40,000	
Environmental Lab Services	$24,684	($12,342)	$0	$12,342	$22,922	($11,461)		$11,461	(6)
Temporary Personnel Services	$27,957	($13,979)	$0	$13,979	$25,961	($12,981)		$12,981	(6)
Advertising	$5,873	$0	$0	$5,873	$5,454			$5,454	
Software Purchases	$2,059	$0	$0	$2,059	$1,912			$1,912	
Pest Control Services	$1,955	($489)	$0	$1,466	$1,815	($454)		$1,361	(7)
Investigative Services	$53	0	$270	$323	$49		$251	$300	(8)
Banking Services	$0	$0	$0	$0	$0			$0	
Uniform Rental Services	$3,784	$0	$0	$3,784	$3,514			$3,514	
Tire Shredding Services	$8,548	($8,548)	$0	$0	$7,938	($7,938)		$0	
Household Hazardous Waste Disposal	$13,400	($13,400)	$0	$0	$12,443	($12,443)		$0	(9)
Misc. Contractual Service	$63,472	$0	$0	$63,472	$58,940			$58,940	
Vehicle M&R Services	$215,378	$0	$61,537	$276,915	$200,000		$57,143	$257,143	
Mechanical M&R Services	$10,769	$0	$0	$10,769	$10,000			$10,000	
Contractual Services Subtotal	**$711,409**	**($129,161)**	**$137,001**	**$719,249**	**$660,614**	**($119,939)**	**$127,219**	**$667,894**	
Supplies & Materials									
Forms & Stationary	$2,722	$0	$0	$2,722	$2,528			$2,528	
Office Supplies	$2,716	$0	$0	$2,716	$2,522			$2,522	
Custodial Supplies	$28,261	($7,065)	$0	$21,196	$26,243	($6,561)		$19,682	(7)
Apparel / Protective Wear	$3,262	$0	$0	$3,262	$3,029			$3,029	
Books & Publications	$36	$0	$0	$36	$33			$33	
Subscriptions	$279	$0	$0	$279	$259			$259	
Safety Supplies	$5,009	$0	$0	$5,009	$4,651			$4,651	
Awards & Recognition	$150	$0	$0	$150	$139			$139	
Grounds Maint. Supplies	$10,597	$0	$0	$10,597	$9,840			$9,840	
Food & Dietary Supplies	$3,956	$0	$0	$3,956	$3,674			$3,674	
Minor / Equipment	$18,769	$0	$0	$18,769	$17,429			$17,429	
Chemicals / Gases	$2,721	$0	$0	$2,721	$2,527			$2,527	
Computer / Office M&R Part	$158	$0	$0	$158	$147			$147	
Vehicle M&R Materials	$18,105	$0	$0	$18,105	$16,812			$16,812	
Building M&R Materials	$942	$0	$0	$942	$875			$875	
Mechanical M&R Materials	$785	$0	$0	$785	$729			$729	
Communications M&R Materials	$977	$0	$0	$977	$907			$907	
Streets M&R Materials	$162,750	0	$16,275	$179,026	$151,130		$15,113	$166,243	(11)
Postage	$1,293	$0	$0	$1,293	$1,201			$1,201	
Mailing Services	$274	$0	$0	$274	$254			$254	
Supplies & Materials Subtotal	**$263,762**	**($7,065)**	**$16,275**	**$272,972**	**$244,929**	**($6,561)**	**$15,113**	**$253,481**	

Active Landfill Operation and Maintenance

Schedule 3 - FINAL

	FY 2008				FY 2005				
Operations and Maintenance Cost Type	Lynchburg Budget	Lynchburg's Responsibility	General Adjustment	Regional Budget	Lynchburg Budget	Lynchburg's Responsibility	General Adjustment	Regional Budget	Notes
Gas/Diesel Fuel									
Gas/Diesel - Internal Services	$4,098	0	$3,899	$7,996	$3,805		$3,620	$7,425	(12)
Gas/Diesel - Other	$101,068	0	$96,159	$197,228	$93,852		$89,293	$183,145	(12)
Gas/Diesel Fuel Subtotal	**$105,166**	**$0**	**$100,058**	**$205,224**	**$97,657**	**$0**	**$92,914**	**$190,571**	
Rentals & Leases									
Equipment Rental	$4,963	$0	$0	$4,963	$4,609			$4,609	
Building and Equipment Leases at Lynchburg	$0	$0	$436	$436	$0		$405	$405	(13)
Rentals & Leases Subtotal	**$4,963**	**$0**	**$436**	**$5,399**	**$4,609**	**$0**	**$405**	**$5,014**	
Utilities & Natural Gas									
Telephone	$3,482	$0	$0	$3,482	$3,233			$3,233	
Electricity	$12,629	($3,157)	$0	$9,472	$11,727	($2,932)		$8,795	(7)
Water & Sewer	$11	$0	$0	$11	$10			$10	
Propane Gas	$3,772	($1,886)	$0	$1,886	$3,503	($1,752)		$1,752	(6)
Cellular Services & Pager	$1,070	$0	$0	$1,070	$994			$994	
Natural Gas	$6,459	($3,230)	$0	$3,230	$5,998	($2,999)		$2,999	(6)
Utilities & Natural Gas Subtotal	**$27,423**	**($8,273)**	**$0**	**$19,150**	**$25,465**	**($7,682)**	**$0**	**$17,783**	
Training & Meetings									
Training	$11,431	$0	$0	$11,431	$10,615			$10,615	
Training & Meetings Subtotal	**$11,431**	**$0**	**$0**	**$11,431**	**$10,615**	**$0**	**$0**	**$10,615**	
Misc. Expenses									
Dues and Memberships	$590	$0	$0	$590	$548			$548	
Other Miscellaneous Expense	$20,052	$0	$0	$20,052	$18,620			$18,620	
Street/Traffic Maintenance Charges	$0	$0	$0	$0	$0			$0	
Misc. Expenses Subtotal	**$20,642**	**$0**	**$0**	**$20,642**	**$19,168**	**$0**	**$0**	**$19,168**	
Payments to Other Entities									
Leachate Treatment	$55,460	$0	$6,461	$61,921	$51,500		$6,000	$57,500	(14)
Insurance	$112,073	$0	($79,903)	$32,170	$104,071		($74,198)	$29,873	(15)
Payments to Other Entities Subtotal	**$167,533**	**$0**	**($73,442)**	**$94,091**	**$155,571**	**$0**	**($68,198)**	**$87,373**	
Total	**$1,312,329**	**($144,499)**	**$180,328**	**$1,348,158**	**$1,218,628**	**($134,182)**	**$167,452**	**$1,251,899**	

Notes

(1) 75% regional entity, 25% Lynchburg
(2) $5k brush chipping at Campbell
(3) Bring total to $12,000
(4) Based on input from Counsel staff, per their experience
(5) 75% groudwater monitoring (50/50), 18.2% other monitoring (50/50), 6.8% surveys (66 Lynchburg/33 regional entity)
(6) 50% regional entity, 50% Lynchburg
(7) 75% regional entity, 25% Lynchburg
(8) Bring total to $300
(9) Lynchburg expense
(10) R. W. Beck assumed this go away, but Lynchburg could still be responsible for all or part of it.
(11) Increase 10% for fuel increases due to transportation
(12) Increase by 74% to reflect current costs
(13) Reflects the Regional Entity leasing a portion of the admin building from the City of Lynchburg
(14) Adjust up $6,000 to reflect current costs
(15) Based on quote from Virginia Association of Counties

Inactive Landfill Operation and Maintenance — Schedule 4 - FINAL

Leachate Disposal	Amount	Unit	Price/Unit	FY 2005 Total	FY 2008 Total
Campbell	1,274,000	gallons	$0.0064	$8,141	$8,767
Amherst	2,100,000	gallons	$0.0064	$13,420	$14,452
Leachate Disposal Subtotal				$21,561	$23,219

Environment Monitoring	Amount	Unit	Price/Unit	FY 2005 Total	FY 2008 Total
Campbell	1	LS	$38,000	$38,000	$40,922
Amherst	1	LS	$10,296	$10,296	$11,087
Environment Monitoring Subtotal				$48,296	$52,009

Site Maintenance	Amount	Unit	Price/Unit	FY 2005 Total	FY 2008 Total
Campbell	1	LS	$19,000	$19,000	$20,461
Amherst	1	LS	$3,500	$3,500	$3,769
Site Maintenance Subtotal				$22,500	$24,230

Total				**$92,357**	**$99,458**

Equipment

Schedule 5 - FINAL

Lynchburg	Original Cost	Year Acquired	Remaining Life	Acquisition Cost	Keep or Sell	Estimated Sell Price	Net Financing Needed
Hydro Seeding System	$8,879	1992	0.0	$266	Keep		$266
Washer, Pressure, Trailer - Mounted	$8,850	1993	0.0	$266	Keep		$266
File Server, 486DX	$8,275	1994	0.0	$248	Keep		$248
Scanner for Work Management System	$7,055	1997	0.0	$212	Keep		$212
Emergency Light Tower	$12,359	1994	10.0	$5,462	Keep		$5,462
Video Surveillance System	$5,045	1995	0.0	$151	Keep		$151
Paradigm Software System	$19,314	1997	0.0	$579	Keep		$579
Steel Deck Truck Scale	$60,175	2002	5.7	$34,099	Keep		$34,099
Steel Deck Truck Scale	$60,175	2002	5.7	$34,099	Keep		$34,099
Portable Radios (18)	$32,400	1995	0.0	$972	Keep		$972
Mobile Radios (20)	$36,000	1995	2.5	$6,000	Keep		$6,000
J. D. Rubber Tire Loader	$99,750	1993	0.0	$6,983	Sell	$6,983	$0
Dozer (D8)	$286,793	1993	0.0	$20,076	Keep		$20,076
Tractor (6200)	$44,872	1994	0.0	$1,346	Keep		$1,346
Street Flusher	$84,883	1993	0.0	$2,546	Keep		$2,546
Service Truck	$60,637	1993	0.0	$1,819	Sell		$1,819
Dump Truck	$41,358	1994	0.0	$1,241	Keep		$1,241
Pick-up 4X4	$22,002	2001	1.5	$4,125	Keep	$4,125	$0
Dump Truck #1 w/ Hook-Lift	$100,359	2002	2.5	$31,362	Keep		$31,362
Truck	$25,980	2002	1.5	$5,567	Keep		$5,567
Rubber Tire Loader	$107,965	2002	4.5	$48,584	Keep		$48,584
Forklift	$20,835	1996	0.5	$868	Keep		$868
Flatbed Trailer	$2,552	1998	2.5	$532	Keep		$532
Pan Scraper (Wheel Scraper)	$319,000	2002	1.5	$68,357	Sell	$125,000	($56,643)
John Deere Riding Mower	$3,999	2002	2.5	$1,250	Keep		$1,250
Bushhog Mower (attach)	$5,400	2001	1.5	$1,013	Sell	$1,013	$0
Compactor (Caterpillar)	$353,389	2003	0.5	$35,339	Sell	$65,775	($30,436)
Compactor (Caterpillar)	$281,921	2004	1.5	$84,576	Keep		$84,576
Compactor (BOMAG)	$311,034	2004	1.5	$93,310	Keep		$93,310
973 Track Loader (CAT)	$291,624	2004	1.5	$87,487	Keep		$87,487
Open Top Bins (10)	$30,000	1998	0.5	$1,500	Keep		$1,500
Chainsaw	$319	2001	0.0	$10	Keep		$10
Freon Remover	$595	2005	2.5	$298	Keep		$298
Dodge Neon	$11,930	2004	6.5	$7,755	Keep		$7,755
Fuel Truck	$108,965	2005	9.5	$86,264	Keep		$86,264
Subtotal	**$2,874,689**			**$674,562**		**$202,895**	**$471,666**

Campbell	Original Cost	Year Acquired	Remaining Life	Acquisition Cost	Keep or Sell	Estimated Sell Price	Net Financing Needed
Scale	$51,000		0.0	$1,530	Keep		$1,530
Above ground fuel tank	$18,000		0.0	$540	Keep		$540
2005 Pick-up truck	$22,000		3.5	$12,833	Keep		$12,833
2004 Pick-up truck	$21,359		2.5	$8,900	Keep	$8,900	$0
2003 Pick-up truck	$20,737		1.5	$5,184	Keep	$5,184	$0
Scalehouse software and hardware	$17,000		1.5	$5,100	Keep		$5,100
1973 Fruehauf Tank Trailer	$5,000		5.5	$688	Keep		$688
2000 Mad Vac Trailer	$18,607		12.5	$11,629	Keep		$11,629
2002 Lowboy Trailer	$23,863		9.5	$15,113	Keep		$15,113
Brush Chipper	$11,995		0.0	$360	Keep		$360
Komatsu PC200-3 Hoe	$55,000		0.0	$1,650	Sell		$1,650
Caterpillar Track Loader 963	$149,226	2002	1.5	$31,977	Sell	$55,499	($23,522)
Caterpillar 615-C II Elevating Scraper	$270,996	2003	3.5	$118,561	Keep		$118,561
Caterpillar 973 Track Loader	$269,489	2003	2.5	$96,246	Sell	$104,949	($8,703)
Kubota Tractor/ Loader/ Bush Hog	$29,001		3.5	$10,150	Keep		$10,150
2004 Caterpillar 836G-11 Compactor	$392,970	2004	4.5	$221,046	Keep		$221,046
Subtotal	**$1,376,243**			**$541,507**		**$174,531**	**$366,976**

Amherst	Original Cost	Year Acquired	Remaining Life	Acquisition Cost	Keep or Sell	Estimated Sell Price	Net Financing Needed
CAT 816 Compactor	$250,000	1999	0.0	$17,500	Sell	$80,417	($62,917)
Paradigm Software	$14,000		0.0	$420	Sell	$420	$0
Scale	$70,000		0.0	$2,100	Keep		$2,100
2003 One Ton 4 x 4 Dump Truck	$25,953		2.5	$9,269	Keep		$9,269
1996 Chevrolet 2 x 2 Pickup Truck	$14,051		0.0	$422	Sell	$422	$0
Subtotal	**$374,004**			**$29,710**		**$81,258**	**($51,548)**

Equipment

Schedule 5 - FINAL

					Replacement Schedule						
Lynchburg	Need Replacement	Replacement Year	Replacement Cost	Useful Life	2008	2009	2010	2011	2012	2013	2014
Hydro Seeding System	Y	2008	$13,181	5	$3,044	$3,044	$3,044	$3,044	$3,044	$3,445	$3,445
Washer, Pressure, Trailer - Mounted	Y	2008	$12,817	10	$1,660	$1,660	$1,660	$1,660	$1,660	$1,660	$1,660
File Server, 486DX	Y	2008	$11,692	5	$2,701	$2,701	$2,701	$2,701	$2,701	$3,055	$3,055
Scanner for Work Management System	Y	2008	$9,257	5	$2,138	$2,138	$2,138	$2,138	$2,138	$2,419	$2,419
Emergency Light Tower	Y	2015	$20,758	15							
Video Surveillance System	Y	2008	$6,955	7	$1,202	$1,202	$1,202	$1,202	$1,202	$1,202	$1,202
Paradigm Software System	Y	2008	$25,341	5	$5,853	$5,853	$5,853	$5,853	$5,853	$6,622	$6,622
Steel Deck Truck Scale	Y	2013	$78,955	10						$10,225	$10,225
Steel Deck Truck Scale	Y	2013	$78,955	10						$10,225	$10,225
Portable Radios (18)	Y	2008	$44,664	10	$5,784	$5,784	$5,784	$5,784	$5,784	$5,784	$5,784
Mobile Radios (20)	Y	2010	$52,139	15			$5,023	$5,023	$5,023	$5,023	$5,023
J. D. Rubber Tire Loader	N	0	$0	12							
Dozer (D8)	Y	2008	$415,362	12	$46,863	$46,863	$46,863	$46,863	$46,863	$46,863	$46,863
Tractor (6200)	N	0	$0	12							
Street Flusher	Y	2008	$122,936	12	$13,870	$13,870	$13,870	$13,870	$13,870	$13,870	$13,870
Service Truck	N	0	$0	12							
Dump Truck	Y	2008	$58,438	12	$6,593	$6,593	$6,593	$6,593	$6,593	$6,593	$6,593
Pick-up 4X4	Y	2009	$26,807	8		$4,148	$4,148	$4,148	$4,148	$4,148	$4,148
Dump Truck #1 w/ Hook-Lift	Y	2010	$122,278	8			$18,919	$18,919	$18,919	$18,919	$18,919
Truck	Y	2009	$30,882	7		$5,337	$5,337	$5,337	$5,337	$5,337	$5,337
Rubber Tire Loader	Y	2012	$138,204	10					$17,898	$17,898	$17,898
Forklift	Y	2008	$28,021	12	$3,161	$3,161	$3,161	$3,161	$3,161	$3,161	$3,161
Flatbed Trailer	Y	2010	$3,432	12			$387	$387	$387	$387	$387
Pan Scraper (Wheel Scraper)	N	0	$0	7							
John Deere Riding Mower	Y	2010	$4,872	8			$754	$754	$754	$754	$754
Bushhog Mower (attach)	N	0	$0	8							
Compactor (Caterpillar)	N	0	$0	5							
Compactor (Caterpillar)	Y	2009	$318,968	5		$73,674	$73,674	$73,674	$73,674	$73,674	$83,355
Compactor (BOMAG)	Y	2009	$351,906	5		$81,282	$81,282	$81,282	$81,282	$81,282	$91,963
973 Track Loader (CAT)	Y	2009	$329,946	5		$76,209	$76,209	$76,209	$76,209	$76,209	$86,224
Open Top Bins (10)	Y	2008	$38,403	10	$4,973	$4,973	$4,973	$4,973	$4,973	$4,973	$4,973
Chainsaw	Y	2008	$379	5	$88	$88	$88	$88	$88	$99	$99
Freon Remover	Y	2010	$673	5			$155	$155	$155	$155	$155
Dodge Neon	Y	2014	$15,271	10							$1,978
Fuel Truck	Y	2017	$146,546	12							
Subtotal			**$2,508,037**		**$97,931**	**$338,580**	**$363,819**	**$363,819**	**$381,717**	**$403,984**	**$436,338**
					Present Value	**$1,924,608**					

Equipment

Schedule 5 - FINAL

					Replacement Schedule						
Campbell	Need Replacement	Replacement Year	Replacement Cost	Useful Life	2008	2009	2010	2011	2012	2013	2014
Scale	Y	2008	$65,284	10.0	$8,455	$8,455	$8,455	$8,455	$8,455	$8,455	$8,455
Above ground fuel tank	Y	2008	$23,042	10.0	$2,984	$2,984	$2,984	$2,984	$2,984	$2,984	$2,984
2005 Pick-up truck	Y	2011	$23,401	6.0				$4,610	$4,610	$4,610	$4,610
2004 Pick-up truck	Y	2010	$23,287	6.0			$4,588	$4,588	$4,588	$4,588	$4,588
2003 Pick-up truck	Y	2009	$0	6.0		$0	$0	$0	$0	$0	$0
Scalehouse software and hardware	Y	2009	$18,535	5.0		$4,281	$4,281	$4,281	$4,281	$4,281	$4,844
1973 Fruehauf Tank Trailer	Y	2013	$11,720	40.0						$683	$683
2000 Mad Vac Trailer	Y	2020	$22,393	20.0							
2002 Lowboy Trailer	Y	2017	$27,334	15.0							
Brush Chipper	Y	2008	$15,355	10.0	$1,988	$1,988	$1,988	$1,988	$1,988	$1,988	$1,988
Komatsu PC200-3 Hoe	N	0	$62,227	5.0						$16,262	$16,262
Caterpillar Track Loader 963	N	0	$0	7.0							
Caterpillar 615-C II Elevating Scraper	Y	2011	$330,182	8.0				$51,086	$51,086	$51,086	$51,086
Caterpillar 973 Track Loader	N	0	$0	7.0							
Kubota Tractor/ Loader/ Bush Hog	Y	2011	$34,050	10.0				$4,410	$4,410	$4,410	$4,410
2004 Caterpillar 836G-11 Compactor	Y	2012	$478,796	8.0					$74,080	$74,080	$74,080
Subtotal			**$1,135,606**		**$13,427**	**$17,708**	**$22,296**	**$82,403**	**$156,483**	**$173,427**	**$173,990**
					Present Value	**$491,576**					

					Replacement Schedule						
Amherst	Need Replacement	Replacement Year	Replacement Cost	Useful Life	2008	2009	2010	2011	2012	2013	2014
CAT 816 Compactor	N	0	$0	5.0							
Paradigm Software	N	0	$0	5.0							
Scale	Y	2008	$89,606	10.0	$11,604	$11,604	$11,604	$11,604	$11,604	$11,604	$11,604
2003 One Ton 4 x 4 Dump Truck	Y	2010	$29,003	7.0			$5,012	$5,012	$5,012	$5,012	$5,012
1996 Chevrolet 2 x 2 Pickup Truck	N	0	$0	7.0							
Subtotal			**$118,609**		**$11,604**	**$11,604**	**$16,617**	**$16,617**	**$16,617**	**$16,617**	**$16,617**
					Present Value	**$86,830**					

Summary	Total Acquisition Cost	Sales	Financing Needed	Annual Payment
Vehicle Acquisition	$1,245,779	$458,685	$787,094	$136,025
Vehicle Replacement Fund				$432,571
Total				$568,596

Current Capital Assets	Original Cost	Acquisition Cost	Year Acquired	Finance Term
Lynchburg				
Existing Site Improvements	Original Cost	Acquisition Cost		
Land, Site Prep., Grading, Clearing, Access Roads, Fencing	$194,925	$86,144	2008	5
Pipe, Sewer 18" Concrete 3993 LF Landfill-Concord Turnpike	$253,684	$112,112	2008	5
Landfill Site Preparation, Grading, Clearing, Re-Routing Waterways, Wood Waste Area	$2,040,762	$901,882	2008	5
Storm Drainage	$99,189	$43,835	2008	5
Pipe, Water, 8" Diameter, Approx. 1.785LF	$69,614	$30,765	2008	5
Pipe, Sewer, 8" Diameter, Approx. 1,180LF	$88,158	$38,960	2008	5
Concrete Pad	$58,327	$25,777	2008	5
Asphalt Paving, Entrance & Access Roads, C&G, Oper. Bldg. Prkng-800SY Appx. $15000, &	$664,945	$293,862	2008	5
Guardrail	$33,531	$14,818	2008	5
Fencing, Wood & Chain Link	$23,717	$10,481	2008	5
Sediment Basin #3	$6,649	$2,938	2008	5
Erosion Control System, Straw Bales, Siltation Control Fences, Brush Barriers, Riprap	$135,354	$59,817	2008	5
Electrical Wiring	$45,690	$20,192	2008	5
Pipe, Water, 1" Copper, 68LF	$2,985	$1,319	2008	5
Pipe, Sewer, 12" RCP. W/One Manhole, 30LF	$4,377	$1,934	2008	5
Pipe, Water, 1 1/2" Copper, 180LF	$996	$440	2008	5
Pipe, Sewer, 24" Di, 60LF	$4,710	$2,081	2008	5
Landfill, Earthwork, Pushed Area For Rock Tenn	$1,039	$459	2008	5
Pipe, Sewer, 4" PVC, 115LF	$3,545	$1,567	2008	5
Pipe, Sewer, 4" PVC, 2 Lines, 130LF(total)	$3,206	$1,417	2008	5
Pipe, Sewer, 2" Copper W/Meter Box & Yoke, 90LF	$1,850	$817	2008	5
Pipe, Sewer, 8" VC, 128LF	$7,787	$3,441	2008	5
Pipe, Sewer, 8" VC, 128LF	$3,894	$1,721	2008	5
Pipe, Sewer, 8" Di Cl. 50, 292LF	$23,027	$10,176	2008	5
Asphalt & Concrete Paving, Curbs, Gutters, Sidewalk Ditches, & Shoulder Stone	$31,770	$14,040	2008	5
Curbs & Gutters, 220LF	$5,505	$2,433	2008	5
Curb & Gutter, 211LF	$2,496	$1,103	2008	5
Asphalt Paving, Nickerson Drive	$4,219	$1,865	2008	5
Asphalt Paving, Industrial Dump Site, Access Road, Turnaround Area	$36,978	$16,342	2008	5
Lighting System, Roadway, 41 Poles w/400W Mounted Lights, Aerial Cables, Remote Control	$126,932	$56,096	2008	5
Gate, Rear Entry to Landfill, 30'	$13,758	$6,080	2008	5
Pipe-Leachate 2,500 LF	$84,435	$1,411	2008	5
Land Improvements	$5,797	$97	2008	5
Pipe	$9,275	$155	2008	5
Landfill Monitoring System (Infrared Analyzer for Methane & Carbon Dioxide)	$5,455	$2,074	2008	5
	$4,098,579	**$1,768,653**		
Landfill Capacity and Land	Original Cost	Acquisition Cost		
Construction and Components of Phase III Landfill Development	$1,898,134	$1,270,252	2008	5
Land, Sanitary Landfill Concord Turnpike - 9.80 Acres Tax Map	$9,760	$4,313	2008	5
Land, Sanitary Landfill Concord Turnpike - 4.02 Acres Tax Map	$9,760	$4,313	2008	5
Land, Sanitary Landfill Concord Turnpike - 4.75 Acres Tax Map	$9,760	$4,313	2008	5
Land, Sanitary Landfill Concord Turnpike - 8.13 Acres Tax Map	$9,760	$4,313	2008	5
Land, Sanitary Landfill Concord Turnpike - 0.40 Acres Tax Map	$1,998	$883	2008	5
Land, Sanitary Landfill Concord Turnpike - 22.84 Acres Tax Map	$38,985	$17,229	2008	5
Land, Sanitary Landfill Concord Turnpike - 28.70 Acres Tax Map	$52,176	$23,058	2008	5
Land, Sanitary Landfill Concord Turnpike - 2.67 Acres Tax Map	$74,475	$32,913	2008	5
Land, Sanitary Landfill Concord Turnpike - Approx. 2 Acres Tax Map	$71,751	$31,709	2008	5
Land, Sanitary Landfill, Property Fronting Concord Turnpike Tax Map	$10,148	$4,485	2008	5
Land, Sanitary Landfill, Tyreeanna Rd.,Tax Maps	$45,803	$20,242	2008	5
Landfill Liner System, Clay Liner	$505,261	$223,292	2008	5
Landfill Liner System, Leachate Collection 6" Perforated PVC Pipe in 1 1/2' VDOT #3 Stone	$120,887	$53,424	2008	5
Landfill Liner System, HDPE Liner, 60 Mils. Dense, GEONET Liner, Non-Woven, GEOT Extile	$844,507	$373,217	2008	5
Landfill Liner System, Cushion Layers, Soil and Stone	$728,874	$322,114	2008	5
Landfill, Design & Engineering	$458,198	$202,493	2008	5
Environmental Assessments, Tyreeanna Land Purchase	$53,405	$23,601	2008	5
Landfill Permit	$20,559	$9,086	2008	5
Landfill, Design & Engineering	$418,314	$279,940	2008	5
Environmental Assessments, Tyreeanna Land Purchase	$49,106	$21,701	2008	5
Environmental Assessments, Tyreeanna Land Purchase	$2,619	$1,158	2008	5
Landfill Survey, Property Exchange Between City & Tyreeanna Church	$1,218	$538	2008	5
Landfill Liner System, 24" Soil Liner, 14845 CY	$288,294	$4,817	2008	5
Landfill Liner System, 18" Soil Cushion, 11,135 CY	$163,367	$2,730	2008	5
Landfill Liner System, HDPE Liner, 22,264 SY	$242,774	$4,057	2008	5
Geotextile Fabric	$40,462	$676	2008	5
Geocomposite Liner	$202,312	$3,381	2008	5
Landfill Liner System	$27,128	$453	2008	5
Landfill Liner System	$33,710	$563	2008	5
Landfill Liner System	$99,991	$1,671	2008	5
Landfill Liner System	$10,434	$174	2008	5
	$6,543,930	**$2,947,112**		
Buildings	Original Cost	Acquisition Cost		
Building, Scale House	$51,432	$22,730	2008	5
Building, Hazardous Drop-Off, Prefabricated Steel Ext. Relocatable, Apx. 33'4" x 8'8" W/Waste	$45,337	$20,036	2008	5
	$96,769	**$42,766**		
Campbell				
Existing Site Improvements	Original Cost	Acquisition Cost		
Paved roads within the landfill	$105,000	$73,233	2008	5
Stormwater pond	$242,000	$168,784	2008	5
Leachate tank and pumping station	$239,800	$167,249	2008	5
Fencing	$45,000	$31,385	2008	5
	$756,800	**$516,471**		

Landfill Capacity and Land	Original Cost	Acquisition Cost		
Phase III, Cell 5 - Engineering, Design, Construction	$1,292,500	$593,459	2008	5
Phase III, Cell 5 - Land (4.07 acres)	$12,475	$5,728	2008	5
Phase III, Cell 5 - Excavation of 160,000 cubic yards	$240,000	$110,198	2008	5
Phase III, Cell 6 - Land (4.30 acres)	$13,180	$13,180	2008	5
Phase III, Cell 6 - Partial Excavation (20%)	$47,151	$47,151	2008	5
Phase III, Cell 7 - Land (4.70 acres)	$14,406	$14,406	2008	5
Phase III, Cell 7 - Partial Excavation (20%)	$74,762	$74,762	2008	5
Phase IV, Cell 1 - Land (5.82 acres)	$17,838	$17,838	2008	5
Phase IV, Cell 2 - Land (5.08 acres)	$15,570	$15,570	2008	5
Phase IV, Cell 3 - Land (4.44 acres)	$13,609	$13,609	2008	5
Phase IV, Cell 4 - Land (3.65 acres)	$11,187	$11,187	2008	5
Phase IV, Cell 5 - Land (1.49 acres)	$4,567	$4,567	2008	5
Other Land in Phases III and IV	$0	$0	2008	5
Additional 42 acres	$0	$0	2008	5
Permit for Parts A and B	$250,000	$174,363	2008	5
	$2,007,243	**$1,096,017**		
Buildings	Original Cost	Acquisition Cost		
Landfill Administration Office/Scalehouse	$110,000	$76,720	2008	5
Maintenance building/shop	$101,200	$70,582	2008	5
Storage building located between Phases III and IV	$18,700	$13,042	2008	5
Recycling Building in Phase I	$21,450	$14,960	2008	5
	$251,350	**$175,305**		
Amherst				
Existing Site Improvements	Original Cost	Acquisition Cost		
Stormwater pond	$100,000	$67,999	2008	5
Leachate pond	$350,000	$237,996	2008	5
	$450,000	**$305,995**		
Landfill Capacity and Land	Original Cost	Acquisition Cost		
Blasting of Trench A	$766,000	$448,520	2008	5
Phase 1 Lining	$1,250,000	$0	2008	5
Original engineering (includes entire site)	$263,600	$179,245	2008	5
Phase 2 Engineering	$156,000	$0	2008	5
Phase 2 Survey	$8,900	$0	2008	5
Phase 2 Construction	$696,380	$0	2008	5
Phase 2 Gravel	$150,000	$0	2008	5
Phase 3 & 4 Engineering	$203,310	$100,942	2008	5
Phase 3 & 4 Construction	$1,377,516	$683,929	2008	5
Land: Trench A, Phase 3	$10,728	$2,658	2008	5
Land: Trench A, Phase 4	$10,115	$8,167	2008	5
Land: Trench A, Phase 5	$18,390	$18,390	2008	5
Land: Trench C	$0	$0	2008	5
Land: Trench D&E	$0	$0	2008	5
	$4,910,938	**$1,441,851**		
Buildings	Original Cost	Acquisition Cost		
Landfill Administration Office	$67,117	$45,639	2008	5
Leonard Storage Building	$4,890	$3,325	2008	5
Scalehouse	$100,000	$67,999	2008	5
	$172,007	**$116,963**		

Future Capital Expenditures Needed for Regional Use	Average Cost Estimate	Year Needed	Adjusted Cost	Finance Term
Lynchburg				
None	$0	---		
Total	**$0**			
Campbell				
Mothballing Costs	$348,053	2008	$348,053	17
Transition of equipment, scales, supplies etc.	$25,000	2013	$28,285	8
Scale House Improvements	$179,000	2013	$202,522	8
Widen Livestock Road	$285,000	2013	$322,451	8
Reconfigure Livestock Rd - Calohan Rd Intersection	$1,125,000	2013	$1,272,834	8
Total	**$1,962,053**		**$2,174,146**	
Amherst				
Mothballing Costs	$330,050	2008	$330,050	17
Transition of equipment, scales, supplies etc.	$25,000	2021	$34,463	4
Widen Isaac Walton Rd	$1,550,000	2021	$2,136,692	4
New Site Entrance	$200,000	2021	$275,702	4
New Scale House	$87,500	2021	$120,620	4
Relocate Scales (2)	$52,500	2021	$72,372	4
On-site Road Improvements	$37,500	2021	$51,694	4
New Equipment Maintenance Building	$320,000	2021	$441,124	4
Total	**$2,602,550**		**$3,462,716**	

Landfill Development Expenses	Total Remaining Development Costs	Year Needed	Adjusted Cost	Finance Term
Lynchburg	$2,202,444	2008	$2,202,444	5
Campbell	$13,351,698	2013	$15,106,220	8
Amherst	$1,260,750	2021	$1,737,958	4

Financial Assurance

Schedule 7 - FINAL

Regional Entity Start Date 7/1/2007

Lynchburg	Total Liability Starting FY 2008	Filled	Remaining	Needed	Inflation Period	Inflation Adjusted	Remaining Life	Annual Financial Assurance
Total Closure Cost	$2,341,796	$1,705,786	$636,010	7/1/2007	0.0	$636,010	5.6	$133,358
Total Post-Closure Cost	$4,204,210	$3,062,386	$1,141,824	7/1/2007	0.0	$1,141,824	5.6	$239,417
	$6,546,005	$4,768,172	$1,777,833			$1,777,833		$372,775
Campbell								
Total Closure Cost	$3,226,139	$1,633,366	$1,592,773	2/1/2013	5.6	$1,828,222	8.0	$282,866
Total Post-Closure Cost	$1,433,645	$725,842	$707,803	2/1/2013	5.6	$812,433	8.0	$125,701
	$4,659,784	$2,359,208	$2,300,576			$2,640,655		$408,567
Amherst								
Total Closure Cost	$2,531,551	$871,530	$1,660,020	2/1/2021	13.6	$2,321,556	3.2	$810,835
Total Post-Closure Cost	$1,914,618	$659,141	$1,255,477	2/1/2021	13.6	$1,755,799	3.2	$613,236
	$4,446,169	$1,530,671	$2,915,498			$4,077,355		$1,424,071
Regional Total		$8,658,051	$6,993,908				16.8	

Reserve

Schedule 8 - FINAL

Operation and Maintenance Reserve	
Operating Budget	
Personnel	$948,407
Active Landfill O&M	$1,348,158
Inactive Landfill O&M	$99,458
Financial Assurance	$372,775
Operating Budget Total	$2,768,798
3 months of O&M	$692,199
Years to accumulate	5
Annual O&M reserve contribution	**$138,440**

Capital Reserve	
Present Value of All Capital Investments	$29,790,626
Landfill Life (years)	17
Annualized Capital Expense	$2,642,403
Debt service for reserve	**$234,379**

Appendix B

Assets and Liabilities

Amherst County Assets and Liabilities

FINAL

Assets	Original Cost	Useful Life	Remaining Life	Units	Depreciation	Remaining Value
Site Improvements						
Stormwater pond	$ 100,000	1,645,500	1,118,922	Cubic Yards	$ 32,001	$ 67,999
Leachate pond	$ 350,000	1,645,500	1,118,922	Cubic Yards	$ 112,004	$ 237,996
Subtotal	**$ 450,000**				**$ 144,005**	**$ 305,995**
Landfill Capacity and Land						
Blasting of Trench A	$ 766,000	1,270,500	743,922	Cubic Yards	$ 317,480	$ 448,520
Phase 1 Lining	$ 1,250,000	100,000	-	Cubic Yards	$ 1,250,000	$ -
Original engineering (includes entire site)	$ 263,600	1,645,500	1,118,922	Cubic Yards	$ 84,355	$ 179,245
Phase 2 Engineering	$ 156,000	200,000	-	Cubic Yards	$ 156,000	$ -
Phase 2 Survey	$ 8,900	200,000	-	Cubic Yards	$ 8,900	$ -
Phase 2 Construction	$ 696,380	200,000	-	Cubic Yards	$ 696,380	$ -
Phase 2 Gravel	$ 150,000	200,000	-	Cubic Yards	$ 150,000	$ -
Phase 3 & 4 Engineering	$ 203,310	450,000	223,422	Cubic Yards	$ 102,368	$ 100,942
Phase 3 & 4 Construction	$ 1,377,516	450,000	223,422	Cubic Yards	$ 693,587	$ 683,929
Land: Trench A, Phase 3	$ 10,728	250,000	61,934	Cubic Yards	$ 8,070	$ 2,658
Land: Trench A, Phase 4	$ 10,115	200,000	161,488	Cubic Yards	$ 1,948	$ 8,167
Land: Trench A, Phase 5	$ 18,390	520,500	520,500	Cubic Yards	$ -	$ 18,390
Land: Trench C	$ -	183,000	183,000	Cubic Yards	$ -	$ -
Land: Trench D&E	$ -	145,000	145,000	Cubic Yards	$ -	$ -
Subtotal	**$ 4,910,938**				**$ 3,469,087**	**$ 1,441,851**
Buildings						
Landfill Administration Office	$ 67,117	1,645,500	1,118,922	Cubic Yards	$ 21,478	$ 45,639
Leonard Storage Building	$ 4,890	1,645,500	1,118,922	Cubic Yards	$ 1,565	$ 3,325
Scalehouse	$ 100,000	1,645,500	1,118,922	Cubic Yards	$ 32,001	$ 67,999
Subtotal	**$ 172,007**				**$ 55,044**	**$ 116,963**
Equipment and Rolling Stock						
CAT 816 Compactor	$ 250,000	5	0.0	Years	$ 250,000	$ 17,500
Paradigm Software	$ 14,000	5	0.0	Years	$ 14,000	$ 420
Scale	$ 70,000	10	0.0	Years	$ 70,000	$ 2,100
2003 One Ton 4 x 4 Dump Truck	$ 25,953	7	2.5	Years	$ 16,684	$ 9,269
1996 Chevrolet 2 x 2 Pickup Truck	$ 14,051	7	0.0	Years	$ 14,051	$ 422
Subtotal	**$ 374,004**				**$ 364,735**	**$ 29,710**
Asset Total	**$ 5,906,949**				**$ 4,032,871**	**$ 1,894,520**

Liabilities	Liability
Closure	$ (871,530)
Post-Closure	$ (659,141)
Outstanding Debt	$ (1,089,337)
Liability Total	**$ (2,620,008)**

Asset and Liability Total	**$ (725,489)**

Campbell County Assets and Liabilities

FINAL

Assets	Original Cost	Useful Life	Remaining Life	Units	Depreciation	Remaining Value
Site Improvements						
Paved roads within the landfill	$ 105,000	3,963,741	2,764,523	Cubic Yards	$ 31,767	$ 73,233
Stormwater pond	$ 242,000	3,963,741	2,764,523	Cubic Yards	$ 73,216	$ 168,784
Clear 30 acres, Phase III	$ 60,000	2,437,913	1,238,695	Cubic Yards	$ 29,514	$ 30,486
Riprap soil erosion features	$ 25,000	3,963,741	2,764,523	Cubic Yards	$ 7,564	$ 17,436
Fire break, 4 acres, Phase IV	$ 8,000	3,963,741	2,764,523	Cubic Yards	$ 2,420	$ 5,580
Seeding intermediate cover, Phase III	$ 12,000	3,963,741	2,764,523	Cubic Yards	$ 3,631	$ 8,369
Clear 4 acres, Phase IV	$ 8,000	3,963,741	2,764,523	Cubic Yards	$ 2,420	$ 5,580
Piping between Phase III and Phase IV	$ 12,000	3,963,741	2,764,523	Cubic Yards	$ 3,631	$ 8,369
Leachate tank and pumping station	$ 239,800	3,963,741	2,764,523	Cubic Yards	$ 72,551	$ 167,249
Fencing	$ 45,000	3,963,741	2,764,523	Cubic Yards	$ 13,615	$ 31,385
Subtotal	**$ 756,800**				**$ 240,329**	**$ 516,471**
Landfill Capacity and Land						
Phase III, Cell 5 - Engineering, Design, Construction	$ 1,292,500	413,036	189,648	Cubic Yards	$ 699,041	$ 593,459
Phase III, Cell 5 - Land (4.07 acres)	$ 12,475	413,036	189,648	Cubic Yards	$ 6,747	$ 5,728
Phase III, Cell 5 - Excavation of 160,000 cubic yards	$ 240,000	413,036	189,648	Cubic Yards	$ 129,802	$ 110,198
Phase III, Cell 6 - Land (4.30 acres)	$ 13,180	405,729	405,729	Cubic Yards	$ -	$ 13,180
Phase III, Cell 6 - Partial Excavation (20%)	$ 47,151	405,729	405,729	Cubic Yards	$ -	$ 47,151
Phase III, Cell 7 - Land (4.70 acres)	$ 14,406	643,318	643,318	Cubic Yards	$ -	$ 14,406
Phase III, Cell 7 - Partial Excavation (20%)	$ 74,762	643,318	643,318	Cubic Yards	$ -	$ 74,762
Phase IV, Cell 1 - Land (5.82 acres)	$ 17,838	146,134	146,134	Cubic Yards	$ -	$ 17,838
Phase IV, Cell 2 - Land (5.08 acres)	$ 15,570	325,229	325,229	Cubic Yards	$ -	$ 15,570
Phase IV, Cell 3 - Land (4.44 acres)	$ 13,609	427,499	427,499	Cubic Yards	$ -	$ 13,609
Phase IV, Cell 4 - Land (3.65 acres)	$ 11,187	433,097	433,097	Cubic Yards	$ -	$ 11,187
Phase IV, Cell 5 - Land (1.49 acres)	$ 4,567	193,869	193,869	Cubic Yards	$ -	$ 4,567
Other Land in Phases III and IV						
Additional 42 acres						
Permit for Parts A and B	$ 250,000	3,963,741	2,764,523	Cubic Yards	$ 75,637	$ 174,363
Subtotal	**$ 2,007,243**				**$ 911,227**	**$ 1,096,017**
Buildings						
Landfill Administration Office/Scalehouse	$ 110,000	3,963,741	2,764,523	Cubic Yards	$ 33,280	$ 76,720
Maintenance building/shop	$ 101,200	3,963,741	2,764,523	Cubic Yards	$ 30,618	$ 70,582
Storage building located between Phases III and IV	$ 18,700	3,963,741	2,764,523	Cubic Yards	$ 5,658	$ 13,042
Recycling Building in Phase I	$ 21,450	3,963,741	2,764,523	Cubic Yards	$ 6,490	$ 14,960
Subtotal	**$ 251,350**				**$ 76,045**	**$ 175,305**
Equipment and Rolling Stock						
Scale	$ 51,000	10.0	0.0	Years	$ 51,000	$ 1,530
Above ground fuel tank	$ 18,000	10.0	0.0	Years	$ 18,000	$ 540
2005 Pick-up truck	$ 22,000	6.0	3.5	Years	$ 9,167	$ 12,833
2004 Pick-up truck	$ 21,359	6.0	2.5	Years	$ 12,460	$ 8,900
2003 Pick-up truck	$ 20,737	6.0	1.5	Years	$ 15,553	$ 5,184
Scalehouse software and hardware (including accounting system)	$ 17,000	5.0	1.5	Years	$ 11,900	$ 5,100
1973 Fruehauf Tank Trailer	$ 5,000	40.0	5.5	Years	$ 4,313	$ 688
2000 Mad Vac Trailer	$ 18,607	20.0	12.5	Years	$ 6,978	$ 11,629
2002 Lowboy Trailer	$ 23,863	15.0	9.5	Years	$ 8,750	$ 15,113
Brush Chipper	$ 11,995	10.0	0.0	Years	$ 11,995	$ 360
Komatsu PC200-3 Hoe	$ 55,000	5.0	0.0	Years	$ 55,000	$ 1,650
Caterpillar Track Loader 963	$ 149,226	7.0	1.5	Years	$ 117,249	$ 31,977
Caterpillar 615-C II Elevating Scraper	$ 270,996	8.0	3.5	Years	$ 152,435	$ 118,561
Caterpillar 973 Track Loader	$ 269,489	7.0	2.5	Years	$ 173,243	$ 96,246
Kubota Tractor/ Loader/ Bush Hog	$ 29,001	10.0	3.5	Years	$ 18,851	$ 10,150
2004 Caterpillar 836G-11 Compactor	$ 392,970	8.0	4.5	Years	$ 171,924	$ 221,046
Subtotal	**$ 1,376,243**				**$ 838,816**	**$ 541,507**
Asset Total	**$ 4,391,637**				**$ 2,066,417**	**$ 2,329,300**

Liabilities	Liability
Closure	$ (1,633,366)
Post-Closure	$ (725,842)
Liability Total	**$ (2,359,208)**

Campbell County Assets and Liabilities

FINAL

Asset and Liability Total	**$ (29,908)**

City of Lynchburg Assets and Liabilities

FINAL

Assets	Original Cost	Useful Life	Remaining Life	Units	Depreciation	Remaining Value
Site Improvements						
Land, Site Prep., Grading, Clearing, Access Roads, Fencing	$ 194,925	4,360,900	1,927,231	Cubic Yards	$ 108,781	$ 86,144
Pipe, Sewer 18" Concrete 3993 LF Landfill-Concord Turnpike	$ 253,684	4,360,900	1,927,231	Cubic Yards	$ 141,572	$ 112,112
Landfill Site Preparation, Grading, Clearing, Re-Routing Waterways, Wood Waste Area	$ 2,040,762	4,360,900	1,927,231	Cubic Yards	$ 1,138,880	$ 901,882
Storm Drainage	$ 99,189	4,360,900	1,927,231	Cubic Yards	$ 55,354	$ 43,835
Pipe, Water, 8" Diameter, Approx. 1.785LF	$ 69,614	4,360,900	1,927,231	Cubic Yards	$ 38,849	$ 30,765
Pipe, Sewer, 8" Diameter, Approx. 1,180LF	$ 88,158	4,360,900	1,927,231	Cubic Yards	$ 49,198	$ 38,960
Concrete Pad	$ 58,327	4,360,900	1,927,231	Cubic Yards	$ 32,551	$ 25,777
Asphalt Paving, Entrance & Access Roads, C&G, Oper. Bldg. Prkng-800SY Appx. $15000, & Admin Bldg $2	$ 664,945	4,360,900	1,927,231	Cubic Yards	$ 371,083	$ 293,862
Guardrail	$ 33,531	4,360,900	1,927,231	Cubic Yards	$ 18,712	$ 14,818
Fencing, Wood & Chain Link	$ 23,717	4,360,900	1,927,231	Cubic Yards	$ 13,235	$ 10,481
Sediment Basin #3	$ 6,649	4,360,900	1,927,231	Cubic Yards	$ 3,710	$ 2,938
Erosion Control System, Straw Bales, Siltation Control Fences, Brush Barriers, Riprap	$ 135,354	4,360,900	1,927,231	Cubic Yards	$ 75,536	$ 59,817
Electrical Wiring	$ 45,690	4,360,900	1,927,231	Cubic Yards	$ 25,498	$ 20,192
Pipe, Water, 1" Copper, 68LF	$ 2,985	4,360,900	1,927,231	Cubic Yards	$ 1,666	$ 1,319
Pipe, Sewer, 12" RCP. W/One Manhole, 30LF	$ 4,377	4,360,900	1,927,231	Cubic Yards	$ 2,443	$ 1,934
Pipe, Water, 1 1/2" Copper, 180LF	$ 996	4,360,900	1,927,231	Cubic Yards	$ 556	$ 440
Pipe, Sewer, 24" Di, 60LF	$ 4,710	4,360,900	1,927,231	Cubic Yards	$ 2,628	$ 2,081
Landfill, Earthwork, Pushed Area For Rock Tenn	$ 1,039	4,360,900	1,927,231	Cubic Yards	$ 580	$ 459
Pipe, Sewer, 4" PVC, 115LF	$ 3,545	4,360,900	1,927,231	Cubic Yards	$ 1,978	$ 1,567
Pipe, Sewer, 4" PVC, 2 Lines, 130LF(total)	$ 3,206	4,360,900	1,927,231	Cubic Yards	$ 1,789	$ 1,417
Pipe, Sewer, 2" Copper W/Meter Box & Yoke, 90LF	$ 1,850	4,360,900	1,927,231	Cubic Yards	$ 1,032	$ 817
Pipe, Sewer, 8" VC, 128LF	$ 7,787	4,360,900	1,927,231	Cubic Yards	$ 4,346	$ 3,441
Pipe, Sewer, 8" VC, 128LF	$ 3,894	4,360,900	1,927,231	Cubic Yards	$ 2,173	$ 1,721
Pipe, Sewer, 8" Di Cl. 50, 292LF	$ 23,027	4,360,900	1,927,231	Cubic Yards	$ 12,850	$ 10,176
Asphalt & Concrete Paving, Curbs, Gutters, Sidewalk Ditches, & Shoulder Stone	$ 31,770	4,360,900	1,927,231	Cubic Yards	$ 17,730	$ 14,040
Curbs & Gutters, 220LF	$ 5,505	4,360,900	1,927,231	Cubic Yards	$ 3,072	$ 2,433
Curb & Gutter, 211LF	$ 2,496	4,360,900	1,927,231	Cubic Yards	$ 1,393	$ 1,103
Asphalt Paving, Nickerson Drive	$ 4,219	4,360,900	1,927,231	Cubic Yards	$ 2,355	$ 1,865
Asphalt Paving, Industrial Dump Site, Access Road, Turnaround Area	$ 36,978	4,360,900	1,927,231	Cubic Yards	$ 20,636	$ 16,342
Lighting System, Roadway, 41 Poles w/400W Mounted Lights, Aerial Cables, Remote Control Wiring, 24Hr.	$ 126,932	4,360,900	1,927,231	Cubic Yards	$ 70,837	$ 56,096
Gate, Rear Entry to Landfill, 30'	$ 13,758	4,360,900	1,927,231	Cubic Yards	$ 7,678	$ 6,080
Pipe-Leachate 2,500 LF	$ 84,435	1,022,300	17,083	Cubic Yards	$ 83,024	$ 1,411
Land Improvements	$ 5,797	1,022,300	17,083	Cubic Yards	$ 5,700	$ 97
Pipe	$ 9,275	1,022,300	17,083	Cubic Yards	$ 9,120	$ 155
Landfill Monitoring System (Infrared Analyzer for Methane & Carbon Dioxide)	$ 3,456	10	6.0	Years	$ 1,382	$ 2,074
Subtotal	**$ 4,096,580**				**$ 2,327,928**	**$ 1,768,653**
Landfill Capacity and Land						
Construction and Components of Phase III Landfill Development	$ 1,898,134	1,742,100	1,165,832	Cubic Yards	$ 627,882	$ 1,270,252
Land, Sanitary Landfill Concord Turnpike - 9.80 Acres Tax Map	$ 9,760	4,360,900	1,927,231	Cubic Yards	$ 5,447	$ 4,313
Land, Sanitary Landfill Concord Turnpike - 4.02 Acres Tax Map	$ 9,760	4,360,900	1,927,231	Cubic Yards	$ 5,447	$ 4,313
Land, Sanitary Landfill Concord Turnpike - 4.75 Acres Tax Map	$ 9,760	4,360,900	1,927,231	Cubic Yards	$ 5,447	$ 4,313
Land, Sanitary Landfill Concord Turnpike - 8.13 Acres Tax Map	$ 9,760	4,360,900	1,927,231	Cubic Yards	$ 5,447	$ 4,313
Land, Sanitary Landfill Concord Turnpike - 0.40 Acres Tax Map	$ 1,998	4,360,900	1,927,231	Cubic Yards	$ 1,115	$ 883
Land, Sanitary Landfill Concord Turnpike - 22.84 Acres Tax Map	$ 38,985	4,360,900	1,927,231	Cubic Yards	$ 21,756	$ 17,229
Land, Sanitary Landfill Concord Turnpike - 28.70 Acres Tax Map	$ 52,176	4,360,900	1,927,231	Cubic Yards	$ 29,118	$ 23,058
Land, Sanitary Landfill Concord Turnpike - 2.67 Acres Tax Map	$ 74,475	4,360,900	1,927,231	Cubic Yards	$ 41,562	$ 32,913
Land, Sanitary Landfill Concord Turnpike - Approx. 2 Acres Tax Map	$ 71,751	4,360,900	1,927,231	Cubic Yards	$ 40,042	$ 31,709
Land, Sanitary Landfill, Property Fronting Concord Turnpike Tax Map	$ 10,148	4,360,900	1,927,231	Cubic Yards	$ 5,663	$ 4,485
Land, Sanitary Landfill, Tyreeanna Rd.,Tax Maps	$ 45,803	4,360,900	1,927,231	Cubic Yards	$ 25,561	$ 20,242
Landfill Liner System, Clay Liner	$ 505,261	4,360,900	1,927,231	Cubic Yards	$ 281,969	$ 223,292
Landfill Liner System, Leachate Collection 6" Perforated PVC Pipe in 1 1/2' VDOT #3 Stone	$ 120,887	4,360,900	1,927,231	Cubic Yards	$ 67,463	$ 53,424
Landfill Liner System, HDPE Liner, 60 Mils. Dense, GEONET Liner, Non-Woven, GEOT Extile Heat Bonded	$ 844,507	4,360,900	1,927,231	Cubic Yards	$ 471,291	$ 373,217
Landfill Liner System, Cushion Layers, Soil and Stone	$ 728,874	4,360,900	1,927,231	Cubic Yards	$ 406,760	$ 322,114
Landfill, Design & Engineering	$ 458,198	4,360,900	1,927,231	Cubic Yards	$ 255,705	$ 202,493
Environmental Assessments, Tyreeanna Land Purchase	$ 53,405	4,360,900	1,927,231	Cubic Yards	$ 29,804	$ 23,601
Landfill Permit	$ 20,559	4,360,900	1,927,231	Cubic Yards	$ 11,473	$ 9,086
Landfill, Design & Engineering	$ 418,314	1,742,100	1,165,832	Cubic Yards	$ 138,374	$ 279,940
Environmental Assessments, Tyreeanna Land Purchase	$ 49,106	4,360,900	1,927,231	Cubic Yards	$ 27,404	$ 21,701
Environmental Assessments, Tyreeanna Land Purchase	$ 2,619	4,360,900	1,927,231	Cubic Yards	$ 1,462	$ 1,158

Landfill Survey, Property Exchange Between City & Tyreeanna Church	$ 1,218	4,360,900	1,927,231	Cubic Yards	$ 680	$ 538
Landfill Liner System, 24" Soil Liner, 14845 CY	$ 288,294	1,022,300	17,083	Cubic Yards	$ 283,477	$ 4,817

Landfill Liner System, 18" Soil Cushion, 11,135 CY	$ 163,367	1,022,300	17,083	Cubic Yards	$ 160,637	$ 2,730
Landfill Liner System, HDPE Liner, 22,264 SY	$ 242,774	1,022,300	17,083	Cubic Yards	$ 238,717	$ 4,057
Geotextile Fabric	$ 40,462	1,022,300	17,083	Cubic Yards	$ 39,786	$ 676
Geocomposite Liner	$ 202,312	1,022,300	17,083	Cubic Yards	$ 198,931	$ 3,381
Landfill Liner System	$ 27,128	1,022,300	17,083	Cubic Yards	$ 26,675	$ 453
Landfill Liner System	$ 33,710	1,022,300	17,083	Cubic Yards	$ 33,146	$ 563
Landfill Liner System	$ 99,991	1,022,300	17,083	Cubic Yards	$ 98,320	$ 1,671
Landfill Liner System	$ 10,434	1,022,300	17,083	Cubic Yards	$ 10,260	$ 174
Subtotal	**$ 6,543,930**				**$ 3,596,818**	**$ 2,947,112**
Buildings						
Building, Scale House	$ 51,432	4,360,900	1,927,231	Cubic Yards	$ 28,702	$ 22,730
Building, Hazardous Drop-Off, Prefabricated Steel Ext. Relocatable, Apx. 33'4" x 8'8" W/Waste Oil Tk	$ 45,337	4,360,900	1,927,231	Cubic Yards	$ 25,301	$ 20,036
Subtotal	**$ 96,769**				**$ 54,004**	**$ 42,766**
Equipment and Rolling Stock						
Hydro Seeding System with Air Gap Fillwell	$ 8,879	5	0.0	Years	$ 8,879	$ 266
Washer, Pressure Jet-A-Way, Trailer - Mounted, Portable	$ 8,850	10	0.0	Years	$ 8,850	$ 266
File Server, 486DX, 16 MEG RAM, 3.5" Media, 14" Color Monitor, Keyboard, Novell Netware	$ 8,275	5	0.0	Years	$ 8,275	$ 248
Scanner for Work Management System	$ 7,055	5	0.0	Years	$ 7,055	$ 212
Emergency Light Tower, Amida Model 5080-4MH Model Trailer Mounted 8KW Air Cooled Diesel Generator	$ 12,359	4,360,900	1,927,231	Cubic Yards	$ 6,897	$ 5,462
Video Surveillance System, Equipment, Cable, Connectors, and Hardware	$ 5,045	7	0.0	Years	$ 5,045	$ 151
Paradigm Software System	$ 19,314	5	0.0	Years	$ 19,314	$ 579
Steel Deck Truck Scale	$ 60,175	10	5.7	Years	$ 26,076	$ 34,099
Steel Deck Truck Scale	$ 60,175	10	5.7	Years	$ 26,076	$ 34,099
Portable Radios (18)	$ 32,400	10	0.0	Years	$ 32,400	$ 972
Mobile Radios (20) (mounted on equipment)	$ 36,000	15	2.5	Years	$ 30,000	$ 6,000
J. D. Rubber Tire Loader	$ 99,750	12	0.0	Years	$ 99,750	$ 6,983
Dozer (D8)	$ 286,793	12	0.0	Years	$ 286,793	$ 20,076
Tractor (6200)	$ 44,872	12	0.0	Years	$ 44,872	$ 1,346
Street Flusher	$ 84,883	12	0.0	Years	$ 84,883	$ 2,546
Service Truck	$ 60,637	12	0.0	Years	$ 60,637	$ 1,819
Dump Truck	$ 41,358	12	0.0	Years	$ 41,358	$ 1,241
Pick-up 4X4	$ 22,002	8	1.5	Years	$ 17,877	$ 4,125
Dump Truck #1 w/Hook-Lift	$ 100,359	8	2.5	Years	$ 68,997	$ 31,362
Truck	$ 25,980	7	1.5	Years	$ 20,413	$ 5,567
Rubber Tire Loader	$ 107,965	10	4.5	Years	$ 59,381	$ 48,584
Forklift	$ 20,835	12	0.5	Years	$ 19,967	$ 868
Flatbed Trailer	$ 2,552	12	2.5	Years	$ 2,020	$ 532
Pan Scraper (Wheel Scraper)	$ 319,000	7	1.5	Years	$ 250,643	$ 68,357
John Deere Riding Mower	$ 3,999	8	2.5	Years	$ 2,749	$ 1,250
Bushhog Mower (attach)	$ 5,400	8	1.5	Years	$ 4,388	$ 1,013
Compactor (Caterpillar)	$ 353,389	5	0.5	Years	$ 318,050	$ 35,339
Compactor (Caterpillar)	$ 281,921	5	1.5	Years	$ 197,345	$ 84,576
Compactor (BOMAG)	$ 311,034	5	1.5	Years	$ 217,724	$ 93,310
973 Track Loader (CAT)	$ 291,624	5	1.5	Years	$ 204,137	$ 87,487
Open Top Bins (10)	$ 30,000	10	0.5	Years	$ 28,500	$ 1,500
Chainsaw	$ 319	5	0.0	Years	$ 319	$ 10
Freon Remover	$ 595	5	2.5	Years	$ 298	$ 298
Dodge Neon	$ 11,930	10	6.5	Years	$ 4,176	$ 7,755
Fuel Truck	$ 108,965	12	9.5	Years	$ 22,701	$ 86,264
Subtotal	**$ 2,874,689**				**$ 2,236,842**	**$ 674,562**
Closure and Post-Closure Reserve Funds						
Closure Reserve Fund	N/A	N/A	N/A	N/A	N/A	$ 1,705,786
Post-Closure Reserve Fund	N/A	N/A	N/A	N/A	N/A	$ 3,062,386
Subtotal	**N/A**				**N/A**	**$ 4,768,172**
Asset Total	**$ 13,611,968**				**$ 8,215,591**	**$ 10,201,263**

City of Lynchburg Assets and Liabilities

FINAL

Liabilities	Liability
Closure	$ (1,705,786)
Post-Closure	$ (3,062,386)
Debt	$ (3,718,252)
Liability Total	**$ (8,486,423)**

Asset and Liability Total	**$ 1,714,840**

Assets that the City will continue to own, but the regional entity would pay for its use on a proportional basis	Original Cost	Useful Life	Remaining Life	Units	Depreciation	Remaining Value
Modular Work Units, Fabric Panels, Acoustical Panels, W/ & W/O Power, Glass Panels, End Caps	$ 5,180	15	2.5	Years	$ 4,316	$ 863
Building, Waste Mgt Office Facility, 2430 Sqft, Metal Siding W/Brick, One Story	$ 28,700	40	24.0	Years	$ 11,480	$ 4,305
Building Improvements, Renovations, Est. Cost of Internal Sys., PLB $15000 Elec $18000 HVAC $10000	$ 178,809	36.5	23.8	Years	$ 62,052	$ 29,393
Building, Operations CTR & 5 Bay Eqpt Storage 4734 SqFt, Block Masonry & Metal Siding, 2 Story	$ 225,866	40	27.3	Years	$ 71,524	$ 33,880
Fiber Optics Cable, Pullboxes, Cables, PVC Conduit 2500Ft, Links Operations and Administration Bldgs.	$ 15,302	15	2.6	Years	$ 12,666	$ 2,635
Above Ground Fuel Tank (10,000 gallons)	$ 28,119	10	2.5	Years	$ 21,089	$ 7,030
Landfill Operations Building Improvements, Including Equipment Lifts, A/E and Consulting	$ 118,050	32	26.5	Years	$ 20,290	$ 97,760
Subtotal	**$ 600,023**				**$ 203,417**	**$ 175,866**
Average Annual Cost						**29,311**