PRELIMINARY COMMITTEE RECOMMENDATIONS

DECEMBER 5, 2008

Preliminary Recommendations for the
2009 Upstate Roundtable Report

The following recommendations have been submitted from each committee to be included in the 2009 Upstate Roundtable Report. These recommendations need to have approval from the Strategic Planning Executive Committee before the report can be completed for review.

(Preliminary Recommendations from the Technical Committee)

A. Regional Cooperation

The Enoree, Reedy and Saluda River Basins are all impacted by regional water quality decisions. Any major water quality issues have a direct impact to future development of any one of the five counties. A regional approach to water quality planning will provide a unilateral approach to future planning and hopefully, provide good environmental solutions for a variety of stakeholders that represent multiple jurisdictions. Many times basin-wide decisions are made utilizing boundary lines that do not reflect the reality of the area hydrology. Many areas of the five counties are in need of wastewater collection and treatment facilities. Current regional sewer plans do not always provide reasonable solutions to these situations due to location of existing infrasture.

Recommendations:

(1) Continually work with Appalachian Council of Governments, ACOG, to ensure that the 208 Water Quality Planning for our region is regularly updated with input from the existing Basin Managers and other stakeholders, including Laurens County which is not specifically within the counties served by ACOG

(2) Develop a planning work group that includes stakeholders from all five counties that adequately represents the water and wastewater utilities, regulatory agencies, municipal and county governments. The group would monitor growth and water quality issues in the Enoree, Reedy and Saluda River Basins and provide recommendations to the existing three Basin Managers for facilitating these needs.

(3) Develop a comprehensive watershed management plan that projects and monitors actual water withdrawals, point and non-point discharges by river basin that could serve as a database resource for growth and regional sewer planning throughout the five county region.

(4) Work with planning and regulatory agencies to develop alternatives for providing wastewater collection and/or treatment to unserved areas that compliment the overall regional sewer plans.

B. Water Reuse

The number of potential reuse alternatives is sizeable and is expanding in the current upstate water crisis and drought. Most alternatives that may be considered by ReWa have been piloted or demonstrated in other locales. An objective engineering evaluation of these, in the context of the Greenville area, is required to prioritize options and for long-range budget and community relations planning.

A water reuse demonstration program will enable ReWa to start the process of overcoming any community resistance to reuse as well as evaluate various technical, regulatory, and economic issues. Such a program should involve as many stakeholders as possible and include a vigorous public participation and public relations component. Synergies are possible with education stakeholders, including public schools and Clemson University's Department of Environmental Engineering and Earth Sciences.

To prevent "reinventing the wheel", ReWa should develop active and robust relationships with other similar agencies with active water reuse programs. These relationships will enable ReWa to learn the technical, economic, and community acceptance successes and challenges already faced by these agencies. They also will enable ReWa to identify challenges yet met by other agencies so ReWa can work on one or more of these to add to the body of useful information on water reuse.

As part of the strategic planning process, ReWa should include a plan for implementation of viable water reuse opportunities. The information generated in several recommendations presented herein will provide the platform for preparation of this 10-year plan.

Recommendations:

(5) Retain a qualified engineering firm to identify, evaluate, and develop planning level costs of potential reuse alternatives, including irrigation of both public and private lands and industrial/commercial uses such as street cleaning, construction dust control, and process water. Identify and evaluate potential regulatory and stakeholders concerns.

(6) Develop a demonstration program to provide a visible public reference for the benefits of water reuse and to gain experience with water reuse that will lead to long term optimization.

(7) Develop relationships with agencies implementing active water reuse programs as sources of ideas and experience that would benefit ReWa.

(8) Prepare a 10 year plan for implementation of viable water reuse opportunities.

(9) Develop guidelines that encourage commercial and industrial facilities to reuse clean water from wastewater treatment agencies and to find ways to recycle clear water from cooling systems on site rather than discharging to the public sewer.

C. Sustainability

Evaluations during the initial stages of project planning will lead to best opportunities for increasing sustainability at minimal cost.

LEED Certification will lead to improvements in ReWa projects and will demonstrate the agency's commitment to environmental improvements.

Improving awareness of emission reduction and fuel conservation can save money for ReWa. Current successes include buy local initiatives and special parking for fuel efficient vehicles and carpools. Improvement of fleet fuel consumption by conversion to hybrids and/or flex-fuel vehicles can enhance environmental and economic goals. Investigation of route optimization may save additional emissions and moneys. Introduction of encouragements to carpool (such as broad awareness of erideshare.com) can produce added savings.

These and similar programs promote sustainability to employees and the community through education, wildlife enhancement, and community involvement.

Less water down the drain means less water to treat. Extend life of existing treatment capacity. For example, Powdersville Water has a system in place for performing such evaluations.

Recommendations:

(10) Perform a "sustainable practice opportunity evaluation" on technology and staffing of major new ReWa projects to identify feasible initiatives for implementation.

(11) Investigate LEED certification for existing buildings during major rehabilitation and remodeling programs and encourage LEED certification where cost effective for new construction at ReWa.

(12) Implement programs to reduce the ReWa "carbon footprint" through efforts such as saving on emissions and fuel consumption.

(13) Continue the practice of developing Wildlife and Industry Together (WAIT), Wildlife Habitat Council, or similar programs at ReWa facilities and properties.

(14) Implement programs to reduce VOC emissions from the variety of tasks performed by ReWa.

(15) Encourage Water Use Audits at customer facilities.

D. Growth

Growth is one of the most important parameters that affects facility planning for water and wastewater infrastructure. In order to obtain experienced insights in this regard, a Combined Upstate Growth Workgroup having a broad understanding of factors influencing Upstate growth was recruited from the Technical and the Policy Committees of the Upstate Roundtable. The Upstate Roundtable Plan covers the period 2009 – 2030 and projecting Upstate growth for this period is one of the most important elements of this undertaking.

The Workgroup goal was to form a consensus on where growth will occur in the Enoree, Reedy and Saluda River Basins in Spartanburg, Laurens, Anderson, Pickens and Greenville Counties; 2015, 2020, 2025, 2030 by:

a. Defining the extent of influence sewers have on development.

b. Defining the factors that will influence growth over the next 2 decades.

c. Reviewing data and information available to address the goal.

d. Providing a growth projection for the Upstate Roundtable.

Recommendations:

(16) Plan future treatment plants so that space and layout allows for plant expansion and for advance technology processes likely to be required by changing regulations.

(17) Obtain properties and right-of-ways for future wastewater infrastructure before land prices increase.

(18) To minimize major capital investment for infrastructure in advance of actual need, DHEC should allow utilities to initiate planning, design and construction of new treatment plants or upgrades of existing plants based upon actual influent flow rather than the cumulative flow of all development that has been permitted.

(19) To minimize major capital investment for regional wastewater processing facilities in advance of actual need, DHEC should allow utilities to propose alternative Unit Contributory Loading, UCL, factors to those listed in R 61-67, Appendix A. This would allow for projected processing facility flows from homes, shops, restaurants, etc to be based upon local conditions and experience.

(20) Development planned for areas not having sewer infrastructure sufficiently close to allow connection, should propose technology and management practices that ensure, for the home owner and public, ongoing operation, maintenance and funding. These practices need to also include a mechanism for an entity to assume stewardship of the infrastructure if the original party can not fulfill its responsibility. The technology for

on site treatment or conveyance to a small treatment plant should be made according to the 208 Area Wide Planning Process.

(21) The technology used for outlying wastewater treatment need to be of sufficient quality and design to meet the policy defined in G9. A technical guidance document for Onsite Wastewater Treatment**,** EPA/625/R-00/008 February 2002, describes a process for selecting systems that, when operated, maintained and funded properly, will produce a quality effluent.

E. I&I, Stormwater, and Non-Point Source Pollution

Wastewater transportation system improvements will protect waters of the State from wastewater contamination and will help stabilize wastewater treatment plant operations and discharge limits. These evaluations will help to prioritize efforts and expenditures aimed at minimizing extraneous water from entering and wastewater from leaving the wastewater transportation system.

Non-point source pollution will consume an increasing percentage of the available capacity of our streams and prevent improvements in water quality. These programs will lead to improved water quality in streams and lakes in the Upstate. In addition these programs will continue to correct historical problems and will ensure timely ongoing repairs to the wastewater transportation system. Aggressively monitoring and evaluating new methods and technologies will lead to more efficient wastewater transportation system operation and maintenance. A comprehensive asset management system will improve the process of prioritizing repair and replacement projects.

Recommendation:

(22) ReWa and the local collector systems should minimize ground and surface water contamination from leaky pipes and manholes (ex-filtration), sanitary sewer overflows (SSO's), and treatment plant wet weather surges caused by infiltration and inflow (I/I) by facilitating sustainable planned and funded ongoing repair and rehabilitation programs for all wastewater transportation collection systems in the ReWa service area.

(23) ReWa should take a leadership role in a joint effort with satellite system operators to evaluate the following:

- Truck and satellite collector sewer capacity
- Causes of SSO's (wet weather, vandalism, clogs)
- Prevalence of ex-filtration
- Extent of storm water connections including all types of roof drains and yard drains (domestic, commercial, and industrial)

(24) That ReWa and satellite collection system operators support the implementation of State and Federally directed stormwater management programs in the Upstate by

sharing data, responding to sanitary sewer system failures and capacity issues and adopting sound engineering standards for construction, operation, and maintenance.

(25) Encourage implementation of best management practices for non-point sources pollution abatement in the Upstate.

(26) That ReWa and local satellite collection systems continue to improve and provide funding for Sanitary Sewer Evaluation Survey (SSES) activities and sewer rehabilitation programs within the three river basin areas.

(27) ReWa and satellite system operators should continue to update their "Operations, Maintenance and Rehabilitation Work Plan" to reflect the availability of new technology and changing conditions within the collection system.

(28) Evaluate and adopt, where feasible, software that integrates the current computer-based GIS/SSES data management system, and maintenance management system into a comprehensive asset management program for buried infrastructure.

(29) Once a TMDL is developed, the load allocation and wasteload allocation should be made according to the 208 Area Wide Planning Process as described in the 208 Water Quality Management Plan. If more stringent limits need to be met, entities responsible for point and non-point sources should be given appropriate compliance schedules to upgrade facilities or implement Best Management Practices. Consideration of pollutant trading should be given whenever the environmental protection achieved for the cost expended is more favorable than traditional solutions. There may be some scenarios where contaminated non point pollution should be routed to a treatment plant rather than being treated on site.

(Preliminary Recommendations from the Policy and Community Issues Committee)

F. Intergovernmental Resource Planning Coordination

Partnerships in Planning Coordination

Develop partnerships with other upstate governmental agencies and organizations in the planning and drafting of recommendations for long term planning.

The upstate governmental agencies and organizations have a vested interest in the direction ReWa takes in the planning and managing of resources. It is important that there is a coordinated effort amongst the agencies and organizations in developing and implementing comprehensive plans. The community service vision and demands will be best served by a coordinated approach where all resources are defined and appropriately applied. The outcome result can be the maximum effort being placed on services rendered at the minimum of cost.

Coordination of efforts promotes sustainability and environmental stewardship which will ultimately allow ReWa to continue to come closer to meeting its mission statement.

Recognition of the planning efforts by the cities, subdistricts and upstate organizations is critical in the coordination of resources for meeting the demands of growth. It is also paramount to achieving and sustaining compliance with environmental regulations. Water is a limited resource that can be best managed through cooperation and combined resource management. There are economic and quality of life benefits in the coordination for efficiency, sustainability, transparency and ability to bring the proper tools to implement the course of action agreed to by the vested parties.

Recommendation:

(30) Governmental agencies should establish a list of common resource needs that can be coordinated through intergovernmental agreements for greater financial efficiency

G. Non-Serviced Areas

Regional Sewer plans

Developing alternatives for providing sewer service to non-serviced areas

Many areas of the five counties are in need or will soon be in need of wastewater collection and treatment facilities. Current regional sewer plans are not always able to provide reasonable solutions to these situations due to various obstacles. The key areas of concern fit into three distinct categories: parcels that are contained within ReWa's boundary and a service provider's boundary, parcels that are contained within ReWa's boundary but have no service provider, and parcels that are not within ReWa's boundary but have a service provider.

Parcels that are contained within both ReWa's boundary and have a service provider are considered infill areas. These are the locations that have sewer service surrounding them, but the infrastructure is not in place to directly serve them. The infill sites are generally the most cost effective to serve since treatment facility and conveyance infrastructure are already in place in their vicinity. The infill areas are depicted quantitatively according to basin in Table X.

Table X: UNSEWERED AREAS AS % OF WWTP BASINS WITHIN RIVER BASINS

River Basin	Total Area of WWTP Basins in Acres	Total Unsewered Area in Acres	Total % of Unsewered Area in River Basin
Saluda Basin	29937	6159	21%
Reedy Basin	80982	9099	11%
Enoree Basin	74632	8382	11%

Parcels that are contained within ReWa's boundary but have no service provider are more difficult to deal with than the infill areas. As both a cause and effect, these sites typically lack ReWa infrastructure (treatment facilities and conveyance) due in part to the absence of a service provider. Growth that occurs in these areas largely results in the undesirable reactive approach to infrastructure planning.

The last category encompasses parcels that have a service provider but are not within ReWa's established boundary. The providers in these locations are located outside Greenville County and usually have the means to provide complete sewer service to their communities; however, providing service to the fringes of their boundaries which may lie within separate hydrologic basins becomes cost prohibitive. Additionally, these are also the locations that have ReWa infrastructure comparatively close to them.

Recommendation:

(31) Work with planning, regulatory agencies and service providers to develop alternatives for providing wastewater collection and treatment to unserved areas that compliment the overall regional sewer plans. Infill areas that promote cost efficiency in wastewater collection and treatment should be a primary focus.

(32) Evaluate the practicality and feasibility of existing service providers to expand their boundary to serve unsewered areas

(33) Evaluate the practicality and feasibility of re-defining the ReWa service area to encompass natural drainage basins.

H. Sustainability

Recognition Incentives

Develop recognition incentives such as awards for customers and agency partners.

The customers of Renewable Water Resources continually strive to allow ReWa to provide a cleaner environment. The use on incentive programs, such as awards, would celebrate those customers and partners that have undertaken innovative programs and initiatives that exemplify environmental stewardship and demonstrate dedication to the ReWa mission.

Recognition of outstanding service and support to sustainability as well as awareness of the upstate's environmental challenges is important in achieving a long lasting means of promoting environmental stewardship. The current ReWa Pollution Prevention Award which recognizes outstanding efforts in waste minimization, water conservation and overall pollution prevention, is an example of the outreach opportunities available to ReWa. Broadening the Pollution Prevention Award to encompass sustainability encourages industrial customers to review their operations with a goal of documenting successes and identifying additional opportunities.

Recommendation:

(34) Continue the WCRSA P2 Award.

(35) Establish a sustainability award.

(36) Establish an environmental stewardship award for ReWa partners.

I. Reuse

Products and by-products

Useful application of unutilized products and by-products

There are several products and by-products of wastewater treatment that have historically been unutilized. Upstate sewer providers should educate the community on reuse opportunities and actively research, investigate and implement polices that address useful products and by-products including treated effluent, solids, methane and land. Reuse strategies offer cost saving opportunities and promote sustainability. The reuse strategies could be used for commercial, industrial, residential and recreational applications.

One potential strategy includes the capture of the energy value associated with the existing hydraulic head between final treatment units at ReWa plants and the normal water levels of receiving waters. The energy value can conceivably be cost effectively converted to electrical power. Electrical power generated could be utilized on-site to reduce plant power consumption, and excess power could conceivably be fed back into the power grid. Another strategy includes capturing methane generated by biosolids and landfills for beneficial use. Currently, the methane is used to heat digesters or is flared. The excess methane has an untapped energy value which can be used at treatment facilities, including building heating, fueling vehicles, etc. There are also opportunities to reuse treatment plant effluent to improve upstream water quality and to provide reclaimed water irrigation at parks and other locations along the Reedy River. Finally, the organic content and nutrient content of residual biosolids has tremendous value as a soil amendment for agricultural fields, and ReWa has implemented an extensive sustainability program of agronomic application of biosolids throughout the upstate. All of these strategies should be evaluated to determine how each may be measured and optimized.

Recommendations – Treatment Plant Effluent

(37) Develop and encourage cooperative efforts with local entities to use purple pipe systems, including activities at ReWa.

(38) Evaluate the costs and feasibility of using ReWa treated effluent to augment flows in rivers.

(39) Evaluate the costs and feasibility of using ReWa treated effluent for alternative uses.

Recommendations – Energy

(40) Evaluate with other agencies the feasibility of using additional energy value of methane generated from biosolids and landfills.

(41) Evaluate potential opportunities for power generation through low head hydroelectric generation with treatment plant effluent.

(42) Where practical use alternate energy sources versus energy from fossil fuels.

(43) Implement an energy reduction program for all ReWa facilities, including baseline snapshot and metrics.

Recommendations – Biosolids

(44) Evaluate and improve existing agricultural reuse of biosolids.

(45) Investigate contracts with growers, either sod or tree farmers, etc. to grow something at the plants using the water, land and nutrients available. This activity should start with a "snapshot" for baseline determination and to serve as the benchmark for metrics.

Recommendations – Green Initiatives

(46) Set goals for reducing, reusing or recycling effluent, methane and biosolids. Goals should be based on "per unit of output" such as per million gallons treated. Goals should start with a "snapshot" for baseline determination and to serve as the benchmark for metrics.

(47) Develop guidelines for purchasing "green" products, such as biodegradable cleaning products, wastewater treatment chemicals, materials with recycled content, etc.

(48) Implement a "zero waste to landfill" target for all ReWa facilities.

(Preliminary Recommendations from the Regulatory and Legislative Committee)

J. Multiple-Use of Rights-of-Ways

ReWa conveys wastewater to our treatment plants via piping in our rights-of-ways. ReWa maintains numerous sewer rights-of-ways which could be used for irrigation of golf courses, industrial parks, residential areas or commercial areas by installing purple pipe which would transport effluent water from our wastewater treatment plants. These sewer rights-of-ways could also accommodate public access trails for walking, hiking or biking.

Reduction of open space through development has become a major issue in upstate planning. Loss of trees and vegetative cover, as well as, intrusion on riparian lands, jeopardizes the quality

of life in the communities of the upstate. Public demand for passive recreational facilities such as hiking and biking trails has increased dramatically. Purchase of tracts of land around existing and future treatment facilities minimizes encroachment of development on these facilities while protecting the open space provided by these lands.

Recommendations:

(49) ReWa should investigate opportunities related to multiple-use of rights-of-ways, especially as related to reuse conveyance;

(50) ReWa should develop formal policies regarding land usage which promote treatment plant buffer land, wetlands enhancement, maintenance of open space and joint recreational use of trunk sewer rights-of-ways;

(51) ReWa should partner with other agencies to implement multiple-use rights-of-ways opportunities via intergovernmental agreements.

K. Growth

Determining where and when growth will occur is one of the most important factors in planning wastewater treatment infrastructure needs for ReWa and the citizens in our service area. To facilitate this analysis, a subcommittee was formed from members of the Technical Committee and the Policy and Community Issues Committee. Since the ReWa service area incorporates all Greenville County and portions of Spartanburg, Anderson, Pickens and Laurens Counties; it is imperative that all parties join together to establish growth priorities, evaluate issues, work through alternatives and determine the best solution for everyone. School, transportation, water and sewer agencies need to work together to obtain the desired sustainable growth. Land use policies in all counties should be evaluated to ensure the policies support established goals of the counties and region. A lower growth ratio would minimize sprawl and thus decrease the need for more wastewater infrastructure to build and maintain. This means that proactive land use planning based on availability of facilities will reduce overall infrastructure costs and reduce impact on existing facilities. Planning should also include wastewater transportation and treatment facilities for areas within the ReWa boundaries that do not currently have sewer service. Consideration should be given to temporary and permanent facilities to accommodate initial and progressive growth, as well as, the ultimate build-out of these areas.

Recommendations:

(52) ReWa should encourage evaluation of land use policies by Greenville, Anderson, Laurens, Pickens and Spartanburg counties;

(53) ReWa should support multi-county and regional policies that maintain or reduce the ratio of land development increase to population increase through higher density infill development;

(54) ReWa should work closely with Greenville and surrounding counties to develop land use policies that provide for greater density within existing and planned sewered areas, thereby minimizing the costs to ReWa and ultimately, ReWa customers;

(55) ReWa should encourage planned wastewater infrastructure to areas of desired growth;

(56) ReWa should strategically plan wastewater transportation and treatment facilities for areas within the ReWa boundaries that do not presently have sewer service.

L. Residential Capacity Allocation

Residential Capacity Allocations are based on a method devised more than fifty years ago. Currently, the Department of Health and Environmental Control (DHEC) Unit Contributory Loading allocates 400 Gallons per Day (GPD) per residence. DHEC will allow for adjustments up to 300 GPD per residence through an approved process called Unit Loading Adjustment. Studies have indicated actual Unit Contributory Loading needs for residential developments range from 250 to 280 GPD per residence. Many suggest that actual needs may be decreasing due to significant improvements made to ensure water efficiency. The public has been urged to use more efficient fixtures, showers, toilets and washing machines to conserve water. Further advancements have been made in the materials used for construction of new development. Utilities are using more reliable materials in new construction and continually focusing their efforts on improving existing collection systems. The Unit Contributory Loading per residence will continue to impact Renewable Water Resources (ReWa) as wastewater treatment standards become more stringent and new residential developments arise. Future adjustments to Unit Contributory Loading per residence will allow ReWa to generate a more manageable and affordable capital improvement program as well as operate both the collections and treatment systems more efficiently.

In concurrence with DHEC, ReWa should investigate opportunities to appropriately adjust the Unit Contributory Load per residence when determining wastewater treatment plant capacity:

Recommendations:

(57) In order to more accurately determine Residential Capacity Allocation ReWa should investigate service area Unit Contributory Loading per residence to ensure the accuracy of system capacity analysis, long-range planning and permit compliance;

(58) ReWa in concurrence with DHEC should investigate opportunities for adjustment to ensure that flows allocated to each new residential development are more closely aligned with actual usage;

(59) ReWa should discuss needed revisions to regulation R.61-67 with DHEC in order to reduce Unit Contributory Loading for residential development from 400 to 300 Gallons per Day (GPD) per residence;

M. ReWa as a Purchaser of Wholesale Electricity

According to a recent energy study done for ReWa, using an alternative energy source would allow ReWa to reduce its electric power costs approximately $600,000 annually, which is approximately 25%. This could be achieved by contracting with Duke Energy for its standby generation under the new PowerShare rate rider, as well as, by developing local generators to use the digester gas and selling the output. Given ReWa's current infrastructure restraints, ReWa plants are being served under the best currently available electric rate schedule.

At this time, statutes do not allow ReWa to purchase electric power and energy on the open market from wholesale suppliers. These statutes could be changed to allow ReWa to buy and sell in a wholesale market. Digester gas at the five anaerobic plants is a Renewable Energy Resource and has value to ReWa as both a source of economical energy and as Renewable Energy Certificates (RECs). RECs are tradable environmental commodities which represent proof that 1 megawatt-hour (MWh) of electricity was generated from an eligible renewable energy resource. If ReWa develops generators to use the digester gas, ReWa will also be able to sell RECs for the facilities.

ReWa produces sufficient gas at all five anaerobic plants to support some electric power generation. Currently, ReWa uses some methane for power generation and burns the excess off. Methane, a chemical compound and the simplest alkaline, is the principal component of natural gas. The relative abundance of methane at wastewater treatment facilities and its clean burning process makes methane a very attractive fuel. There is a potential to capture additional methane gas from the old landfill adjacent to the Mauldin Road plant and the Enoree Landfill. Duke Energy has also opened options to allow us to connect cogeneration facilities either directly to the grid or to our internal distribution system, wherein we could still sell the surplus power.

Recommendations:

(60) ReWa should partner with energy consultants and state legislature to evaluate the viability of becoming a wholesale purchaser of electricity, the appropriate timing of such action and the steps needed.

(61) Meet with State Legislative Representatives to seek support for legislation that addresses Renewable Energy Resources.

(62) Meet with State Legislative Representatives to seek support for legislation that would allow public water and wastewater facility generators to be operated in parallel with the electric utility grid under appropriate circumstances (e.g.- testing periods associated with electric utility standby capacity programs).

(63) Meet with State Legislative Representatives to seek support for legislation that would allow the operation of public water and wastewater facility generators for peak demand shaving

(64) Meet with State Legislative Representatives to discuss potential benefits of legislation that would allow ReWa (or certain water and wastewater utilities in general) to purchase electric power as a wholesale customer to achieve competitive prices.

N. ReWa as a Retail Business

The ultimate goal for ReWa becoming a retail business is to reduce costs for users. Increase ReWa revenues would, in effect, decrease costs to users. Revenue generating services that ReWa could offer include: reuse water, biosolids, retail sewer, and drinking water. ReWa should look for opportunities to educate all customers on effluent reuse and grey water reuse. ReWa should also identify opportunities to reuse effluent from plants internally and externally. Effluent uses outside of wastewater treatment plants should be communicated and promoted to potential users. ReWa needs to create a market for reuse water to encourage the utilization of reuse water and allow ReWa to charge a competitive fee for such usage. Government could assist with increased utilization of reuse water by offering tax incentives, low interest loans, etc., for businesses installing reuse infrastructure. ReWa could also partner with Home Builders Associations to evaluate requiring water reuse capabilities in future residential and/or commercial construction. There are many areas in the United States that currently have legislation in place that requires companies and residences to utilize reuse water. Recently, unincorporated areas have expressed an interest in sewer service. However, no sewer subdistricts have been willing to provide full service sewer. ReWa could address this need by providing this service for a competitive fee. Currently, ReWa land applies biosolids for local farmers free of charge. The waiting list for land applied biosolids shows the emerging market for sales of biosolids. ReWa could also bring effluent water to drinking water standards in order to sell in the marketplace.

Recommendations:

(65) ReWa should identify opportunities and the related legislative actions needed to expand into businesses that complement our primary services.

(66) Consider an amendment to our legislation or general law to encourage the sale of reused water.

(67) Create incentives to utilize water through business tax credits, sales refunds or low interest loans.

O. Residential Capacity Allocation

Residential Capacity Allocations are based on a method devised more than fifty years ago. Currently, the Department of Health and Environmental Control (DHEC) Unit Contributory Loading allocates 400 Gallons per Day (GPD) per residence. DHEC will allow for adjustments up to 300 GPD per residence through an approved process called Unit Loading Adjustment.

Studies have indicated actual Unit Contributory Loading needs for residential developments range from 250 to 280 GPD per residence. Many suggest that actual needs may be decreasing due to significant improvements made to ensure water efficiency. The public has been urged to use more efficient fixtures, showers, toilets and washing machines to conserve water. Further advancements have been made in the materials used for construction of new development. Utilities are using more reliable materials in new construction and continually focusing their efforts on improving existing collection systems. The Unit Contributory Loading per residence will continue to impact Renewable Water Resources (ReWa) as wastewater treatment standards become more stringent and new residential developments arise. Future adjustments to Unit Contributory Loading per residence will allow ReWa to generate a more manageable and affordable capital improvement program as well as operate both the collections and treatment systems more efficiently.

In concurrence with DHEC, ReWa should investigate opportunities to appropriately adjust the Unit Contributory Load per residence when determining wastewater treatment plant capacity:

Recommendations:

(68) In order to more accurately determine Residential Capacity Allocation ReWa should investigate service area Unit Contributory Loading per residence to ensure the accuracy of system capacity analysis, long-range planning and permit compliance;

(69) ReWa in concurrence with DHEC should investigate opportunities for adjustment to ensure that flows allocated to each new residential development are more closely aligned with actual usage;

(70) ReWa should discuss needed revisions to regulation R.61-67 with DHEC in order to reduce Unit Contributory Loading for residential development from 400 to 300 Gallons per Day (GPD) per residence;

(Preliminary Recommendations from the Finance Committee)

P. Market Overview

To maintain its sound financial footing and high credit ratings, Renewable Water Resources (ReWa) must, first and foremost, ensure both adequate system capacity for future growth and strict compliance with environmental rules through long-range capital planning, the implementation of manageable and affordable capital improvement programs, rigorous attention to system maintenance issues, increased operational efficiencies and, increasingly, more inter-governmental partnering.

Recommendation:

(71) To provide adequate funding for its efforts, ReWa should consider written policies related to rates and charges for its services so that they meet the following requirements:

a. Sufficient recurring revenues are generated so as to maintain debt service coverage at a defined minimum level well above the 110% legally required by ReWa's rate covenant;

b. A percentage of infrastructure requirements are to be funded internally;

c. Contingency and capital reserves are maintained at defined levels;

d. Rates and changes are reviewed periodically and adjusted annually to reflect changes in ReWa's cost structure;

e. Growth pays for growth – i.e., connection and other initial service charges are established to generate sufficient revenues to pay a portion of capital expansion costs.

f. Services and the pricing thereof are aligned with the growth and environmental requirements of the service area.

g. A rate study is commissioned every three to five years to ensure rate adequacy for operations and new construction and consideration of the economic viability of alternate rate structures.

h. Funding strategies are reviewed for providing renewable water service to non-serviced areas in the Upstate, e.g., Southwest Saluda Basin to the Western Ridge Line, Huff Creek, Rabon Creek, Northwest Saluda (Pickens and Greenville Counties).

Q. Subdistrict Financial Involvement

Potential strategies to help pay for improvements to enhance the integrity of subdistrict collection systems would be to consider ReWa's (i) serving as a conduit lender to a subdistrict by loaning the proceeds of a ReWa borrowing to the subdistrict, or (ii) making grants to distressed subdistricts. Subdistricts may also consider borrowing directly from SRF or from banks to directly finance the needed improvements. Special SRF "hardship" interest rates may apply to certain smaller systems. Prior Greenville County Council approval will be required for "general obligation" (supported by ad valorem taxes) borrowings by non-municipal subdistricts.

Recommendations:

(72) Support most favorable political and economic avenues for borrowings by subdistricts.

(73) Support the use of South Carolina constitutional debt limit capacities of subdistricts for "general obligation" borrowings (limited to 8% of subdistrict's assessed value, without referendum).

(74) Encourage subdistricts to impose sufficient user fees to support revenue bond borrowings.

(75) Evaluate what types of controls and remedies ReWa should retain as to subdistrict operations to secure loans or grants from ReWa and develop criteria to be used when considering these loans and grants.

R. State Water Pollution Control Revolving Fund

The State Water Pollution Control Revolving Fund is a long-term debt financing program offered by the State of South Carolina to provide local communities with low-interest loans for publicly owned wastewater facilities. Created under the Federal Clean Water Act Amendments of 1987, the program is commonly known as the Clean Water SRF (State Revolving Fund) or the CWSRF.

In South Carolina, two agencies jointly administer the CWSRF. The Department of Health and Environmental Control conducts the technical and programmatic portions of the program, while the Office of Local Government, which is part of the State Budget and Control Board, makes the loans and manages the financial aspects of the CWSRF for the South Carolina Water Quality Revolving Fund Authority.

The CWSRF offers the following major benefits:

- Substantially below-market interest rates.
- Fixed rate financing for up to 20 years.
- Availability of principal and interest deferral through construction.
- Option to capitalize interest at the end of the deferral period.
- Minimal issuance costs.
- Removal of most federal requirements, except environmental, with recycled funds.

In the first year of the program, ReWa received a CWSRF loan and has subsequently obtained ten additional loans. Having borrowed a total of over $158.7 million, ReWa is, by a considerable margin, the largest recipient of CWSRF financing. Over the next 20 years the CWSRF will continue to be a significant source of affordable financing for local wastewater facilities in South Carolina. The total magnitude of available funding will depend on whether federal capitalization continues beyond FY 2010 and at what level. However, even if federal funding is received for

only one more year, the CWSRF will remain a huge and growing resource for financing local sewer infrastructure.

Recommendations:

(76) ReWa should continue to maintain and review annually a current capital improvements plan to enable proposed projects to be included on the SRF priority list.

(77) ReWa should pursue financing of capital projects through CWSRF prior to considering other alternatives.

S. Public Funding Sources for Capital Improvement

ReWa is too large an entity and strong enough financially to be able to directly utilize public funding mechanisms other than the established programs such as the SRF loan program. However, these public funding programs could be utilized by the sub district entities that are tied into ReWa. The sub district or the public entity for the area where the sub district is located could be an applicant to borrow funds for infrastructure projects. These entities could access programs from USDA's Rural Utilities Service, HUD's Community Development Block Grant, Appalachian Regional Commission's Utility Grant, and Economic Development Administration's Infrastructure Grant.

In the Upstate applications for these programs and the submission of the applications can be managed through the resident unit of local government, or through South Carolina Appalachian Council of Governments.

Projects can range from technical assistance studies at a cost of $7,500 to in excess of $1,000,000 for infrastructure.

Other possible sources of funds for the subdistricts include Community Reinvestment Fund, USA which will make market rate loans, and Farm Credit with its Rural America Bond program.

Recommendations:

(78) Evaluate individual public programs as possible sources of project revenue for partnering sub districts. Use the Collection System Alliance group as a platform to educate the groups as to the availability of these programs.

(79) Assess new construction designs to identify innovative processes which would qualify for grant funding.

T. Subdistrict Viability

In the future, distressed subdistricts may potentially be absorbed, by (i) other subdistricts upon County Council approval, (ii) municipalities through annexation (after referendum to dissolve by residents of the subdistrict) or (iii) ReWa with Legislative authority.

Recommendations:

(80) Work with Greenville County Council to consider future of distressed subdistricts.

(81) Consider amendment to ReWa enabling legislation to position ReWa to absorb distressed subdistricts seeking such assistance.

(82) Partner with the Legislative Delegation and other local governments to determine the appropriate strategy for dealing with subdistricts that are not economically or operationally viable. (i.e. loans, assistance in obtaining grants and or other funds.)

U. Auxiliary Sources of Revenue

ReWa's image as the leader in its industry in the region and State carries not only prestige but obligation, as well. Facing the mega-growth expected, new approaches must be explored that may be presently perceived as unconventional avenues. The greatest burden of a successful operation is to resist stagnation and move to the next level of performance. Generations to come shall benefit from cutting edge ideas and resistance of status quo.

To reach beyond the boundary of ordinary and usual activities there must be a mind set of thinking from the public perspective and applying everyday uses to new products (e.g., underutilized energy sources) and services. Product development and customer education compliment an exceptional service provider. Three of the most obvious opportunities for selling waste water by-products are methane, water re-use and electricity.

- Recommendations are addressed by Policy and Community Issues.

U. Obtaining Carbon Credits for Methane Gas

Carbon credits are permits that allow the holder to emit one ton of carbon dioxide. Credits are awarded to entities that have reduced their green house gases below their emission quota. Carbon credits can be traded in the international market at their current market price. Projects to reduce the emission of carbon may be eligible to receive carbon credits if they can successfully argue the offset projects are not standard industry practices.

A potential approach for ReWa to obtain carbon credits is to submit a proposal to the Chicago Climate Exchange (CCX). CCX is the world's first and North America's only active voluntary,

legally binding integrated trading system to reduce emissions of all six greenhouse gases (water vapor, carbon dioxide, methane, nitrous oxide, ozone, and chlorofluorocarbons) with offset projects worldwide. It is an international rules-based greenhouse gas emission reduction, audit, registry, and trading program based in the US.

A second approach for ReWa to obtain carbon credits/offsets is to become a member of CCX. Members are allocated annual emission allowances in accordance with their emissions baseline and the CCX Emission Reduction Schedule. Members who reduce beyond their targets have surplus allowances to sell or bank; those who do not meet the targets comply by purchasing CCX Carbon Financial Instrument® (CFI®) contracts.

Recommendations:

(83) Evaluate ReWa's ability to successfully argue that the methane offset projects should be granted carbon credits.

(84) Evaluate becoming a member of CCX or similar groups

(85) Evaluate the economic impact of selling the carbon credits (if authorized) as a stand alone versus selling the carbon credits, REC's, and generated electric energy as a package.

(86) Join with other sister agencies to combine membership in the CCX in order to pool carbon credits.

(87) Evaluate how many carbon credits ReWa generates.

(Preliminary Recommendations from the Communications Committee)

W. Sustainability and Community Awareness

Logos and branding show at a glance ReWa's commitment to sustainability. Everyone recognizes the three arrows in a circle; ReWa can create an image that is recognized throughout the area. Regular promotion of sustainability in newsletters and website as well as in mailings to customers increases overall awareness of the concept and potential for success. Community awareness of sustainability and its potential to positively impact lives will be strengthened through involving students early.

Recommendations:

(88) Include sustainability in appropriate ReWa communications pieces. As part of this effort, develop a sustainability logo to "brand" this idea for association with ReWa. The sustainability logo may or may not incorporate elements of the existing ReWa's logo and brand.

(89) Develop or include a sustainability section in a ReWa newsletter and other communications pieces and media.

(90) Develop a sort of 3P program similar to 3M where ReWa employees can submit Pollution Prevention Pays ideas and include this in existing ReWa awards programs.

(91) Internally generated sustainability ideas have a high likelihood of success and a built-in cohort of supporters. Many of these ideas have excellent return on investment.

(92) Develop a "Sustainability Slide Set" with accompanying notes for presentation at various grade levels in Greenville schools and similar venues. The slide set may be in several versions, with more sophisticated and lengthier presentations made at the high school levels. ReWa should explore incorporation of this material into curriculum elements at various grade levels.