

Section 2 Capital Improvements Element

6. Methodology for Project Priority Ranking

A specific procedural process was developed with the 1995 SDP to assign a priority ranking for each improvement and an associated project identification number. This process involved:

- 1) Identifying a specific list of criteria to determine project ranking (Step 1)
- 2) Assigning individual projects to categories reflecting these criteria (Step 2)
- 3) Prioritizing the project categories based on goals, values, and objectives, as approved by the M&C (Step 3)
- 4) Developing a mechanism for ranking projects within each category (Step 4)

The 2020 SDP methodology is the same as the 2015 methodology with the differences noted in this section. Differences in the methodologies include additional supporting information sources being used to identify criteria for project ranking (Step 1) and changes to the project categories (Step 2) as summarized in Section 6.2. Individual projects were placed in categories, and categories were prioritized as discussed in Section 6.2 (Step 2 and 3). Lastly, the projects were ranked within their category in Step 4 (Section 6.3).

6.1 Supporting Information (Step 1)

Previous SDP updates used input and information from the sources below to help develop a basis for evaluating capital projects. For the 2020 SDP Update, the Envision Athens Action Agenda (ACCGov, 2017) and FY20 Mayor & Commission Strategic Commitments and Goals were included as additional sources of information. A complete list of the supporting information used to evaluate the importance of the capital projects is listed here:

- **Land Use Plan** – Comprehensive Plans developed by the ACC Planning Department, and associated future population projections, should be used as the basis for the SDP.
- **Growth and Development** – Growth and development trends should be analysed for rate of growth, quantity of growth, density of growth, and land use patterns. Population projections developed by the ACC Planning Department should also be used.
- **University Growth** – Water and wastewater capacity should be estimated using current water billing records and through collaboration with staff from UGA.
- **Transportation Plan** – Proposed transportation projects, including relocations, improvements, and extensions, should be considered, and any recent transportation studies or projects should be reviewed.
- **Current Availability of Water and Sewer** – Potential projects should be evaluated based on currently available capacity for water and wastewater systems. The effects of future population growth on the current capacity should be considered.
- **Public Health Considerations** – Sections of the ACC water and wastewater system with service delivery problems that may impact public health are typically high priority candidates for project selection.
- **Regulatory and Permitting Issues** – ACC is subject to environmental regulations for water and wastewater systems issued by GAEPD, as well as federal and local issuing authorities. Potential projects affecting compliance with current, revised, or new regulations are high priority candidates for project selection.
- **External Development Forces** – Some external development forces fall outside the control of ACC and the Comprehensive Plan. These forces influence project selection and may include projects from entities such as the Georgia Department of Transportation (GDOT).
- **Industrial Service** – Potential projects for utility services to areas designated for industrial development required an analysis of typical industrial needs and the timing for industrial development. Since future water

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and wastewater demands for new industrial customers were developed as a reserve amount, the effects of future industrial growth on capacity were considered.

- **System Reliability** – This 2020 SDP Update places higher emphasis on system reliability and sustainability over projects involving expansion or extension of service. Projects were evaluated and ranked to prioritize the water and wastewater systems operating consistent with existing permit conditions.
- **Cost per Resident** – A cost per resident ratio was used to compare the costs between individual projects. Potential projects serving the highest number of residents at the least cost were shown preference. For projects identified to expand or extend sewer service, the cost per resident was weighted to give preference to water over wastewater, existing customers over future customers, and industrial customers over residential customers.
- **Envision Athens** – Envision Athens Action Agenda should be used as a guide to accomplish the goals and priority actions of ACC in the areas of land use, environment, neighbourhoods, housing, agriculture, economic development, education, health, safety, social services, arts and culture, civic engagement, transportation, and infrastructure (added for SDP 2020 update).
- **FY20 Mayor and Commission Strategic Commitments and Goals** – All of ACCGov's services aligned with one of six strategic commitments should be considered as they relate to providing water and wastewater service and infrastructure to ACC residents (added for SDP 2020 update).

6.2 Project Categories and Priority Ranking (Steps 2 and 3)

For the 2020 SDP Update the six project categories and their priority are as follows:

Priority 1 – Public Health Regulatory Requirement Projects

Regulatory requirement projects must comply with current or proposed regulations coupled with the known or anticipated time frame required for implementation. These include environmental regulations issued by federal, state, or local authorities.

Priority 2 – Public Health Initiatives Projects

Public health projects are determined by the M&C as needs or concerns are identified.

Priority 3 – Rehabilitation and Replacement Projects

Rehabilitation and replacement projects are necessary to maintain current water and wastewater systems consistent with existing permits. This project category includes replacement or rehabilitation of system components due to age or condition that may jeopardize system operations. This also includes projects that are necessary to ensure reliable service to existing water and wastewater customers served by PUD.

Priority 4 – System Expansion Projects

System expansion projects add capacity in existing service areas in order to provide service for new customers. In some cases, system expansion is driven by the increased demands of an existing customer.

Priority 5 – System Extension Projects

System extension projects provide capacity in areas where service does not currently exist and are specifically oriented to providing service to new customers.

Priority 6 – Mayor and Commission Strategic Commitments and Key Performance Indicator Projects

PUD tracks key performance indicators (KPIs) for the operation of the water and wastewater systems and infrastructure to track progress to goals and M&C strategic consultants. Projects to improve KPIs that do not fall in Priorities 1 through 5 are included in this priority.*

6.3 Project Ranking (Step 4)

Each of the 59 projects identified (Section 4) was assigned to one of the six prioritized categories (Section 6.2). The final step ranked the projects within each of their identified categories based on the ranking criteria described in this section. The method for numbering the capital improvement projects is summarized in Section 7.

As previously discussed, identification of water and wastewater improvements for the 2020 SDP Update involved multiple studies, analyses, and staff coordination, through which a robust set of system information was compiled. Therefore, in addition to criteria used to rank projects in prior SDP updates, new information was used to collaboratively prioritize the recommended improvements and develop a schedule for project implementation over 20 years. The methodology used to rank projects within each of the six priorities is discussed below.

6.3.1 Priority 1 – Public Health Regulatory Requirement Projects

Ranking of Priority 1 projects is driven by external requirements by federal, state, or local environmental regulations. Ranking is generally dependent on the permitting process or consent order, and PUD must comply with the regulatory schedules set forth by the issuing authority. Within this category, projects were ranked according to the regulatory requirement date.

6.3.2 Priority 2 – Public Health Initiatives Projects

Ranking of Priority 2 projects is based on the date of need. Water system projects are assigned a higher priority than wastewater system projects. Water and wastewater system projects are evaluated based on the total project cost compared to the number of customers served with higher priority given to water over wastewater projects.

6.3.3 Priority 3 – Rehabilitation and Replacement Projects

Ranking of Priority 3 projects involved a review of multiple pieces of information for each project. Information considered included:

* Georgia Department of Transportation and Economic Projects and Industrial Development Projects (Priority 4 and 5 in previous SDPs), were removed from the Priority Project ranking used in previous SDP Updates as these projects have an annual appropriation. Therefore, projects in these two categories are not considered capital projects. In previous SDP Updates the existing seven project categories approved by M&C were as follows:

- 1) Regulatory Requirement Projects
- 2) System Renewal Projects
- 3) Public Health Projects
- 4) Department of Transportation Relocations, Extensions, or Improvement Projects
- 5) Economic and Industrial Development Projects
- 6) System Expansion Projects
- 7) System Extension Projects

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Date of Need – Date of need was the first criterion evaluated; however, because most projects did not have a specific date of need, projects were initially ranked according to immediate need, mid-planning period need, or long-term need.

Risk Score (Wastewater Collection projects only) – For sewer rehabilitation and replacement projects, the asset risk score was reviewed. Projects were ranked from highest to lowest risk score, as determined in the Risk-based Prioritization Project (CH2M, 2016) and discussed in the Infrastructure Element.

Project Cost – It may not be feasible for multiple large-scale projects to be completed during the same timeframe. Therefore, project ranking took project size (in terms of overall cost) into consideration.

Weighted Cost/Resident – The number of residents benefiting from a project was estimated, when applicable. For WTP improvements, the number of residents served was considered. For WRF improvements, the number of residents served by the specific WRF was considered. For sewer rehabilitation and replacement projects, the number of residents was considered as residents served by PUD sewer at or upstream of the project. For water distribution projects, the number of residents was assumed to be the number of water residents served by the distribution lines included in the project.

Flow Meter Basin “R” Value (Wastewater Collection projects only) – Flow Meter Basin “R” Value is the proportion of rainfall that enters the collection system as inflow or infiltration. Each project was assigned an “R” value according to the flow meter basin in which the project is located, based on the 2015 flow monitoring study, detailed in the Infrastructure Element. (CH2M, 2015)

Calibrated Model – Projects that were identified through a calibrated modeling activity were ranked higher than those identified through other means, due to the higher degree of certainty provided through hydraulic modeling. Project identification involved use of calibrated models to identify wastewater collection and water distribution deficiencies.

Staff Perception – In addition to the more objective criteria summarized above, the institutional knowledge of PUD’s operational staff was included in the evaluation. Projects were ranked in order of importance based on communications with PUD staff. WRF and WTP staff identified their preferred ranking of plant improvement projects, and W&S staff provided input on wastewater collection and water distribution projects based on institutional knowledge and field conditions.

Water system projects are assigned a higher priority than wastewater system projects. The total project cost compared to the number of customers served was considered for water and wastewater system projects. After all of the above information was collected, iterations of project rankings were reviewed and discussed to determine the final ranking of Priority 3 projects.

6.3.4 Priority 4 – System Expansion Projects

Ranking of Priority 4 projects used a methodology similar to ranking Priority 3 projects. The date of need evaluated for Priority 4 was reflective of the date of needed expansion. Also, preference is given to water over wastewater, existing customers over future customers, and industrial customers over residential customers.

6.3.5 Priority 5 – System Extension Projects

System extension projects include only wastewater collection projects, because PUD has met its water service goals. To rank Priority 5 projects, highest priority is given to projects that could connect to existing sewer lines with sufficient capacity to handle the increased flows. Where sufficient capacity does not exist, the project was evaluated based on the cost per resident with preference to industrial customers over residential customers.

6.3.6 Priority 6 – Mayor and Commission Strategic Commitments and Key Performance Indicator Projects

Ranking of Priority 6 projects is determined by M&C based on date of need. Projects related to the KPIs were evaluated based on the KPI goals that PUD has established