

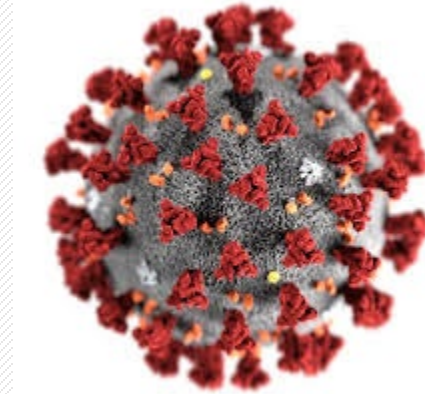
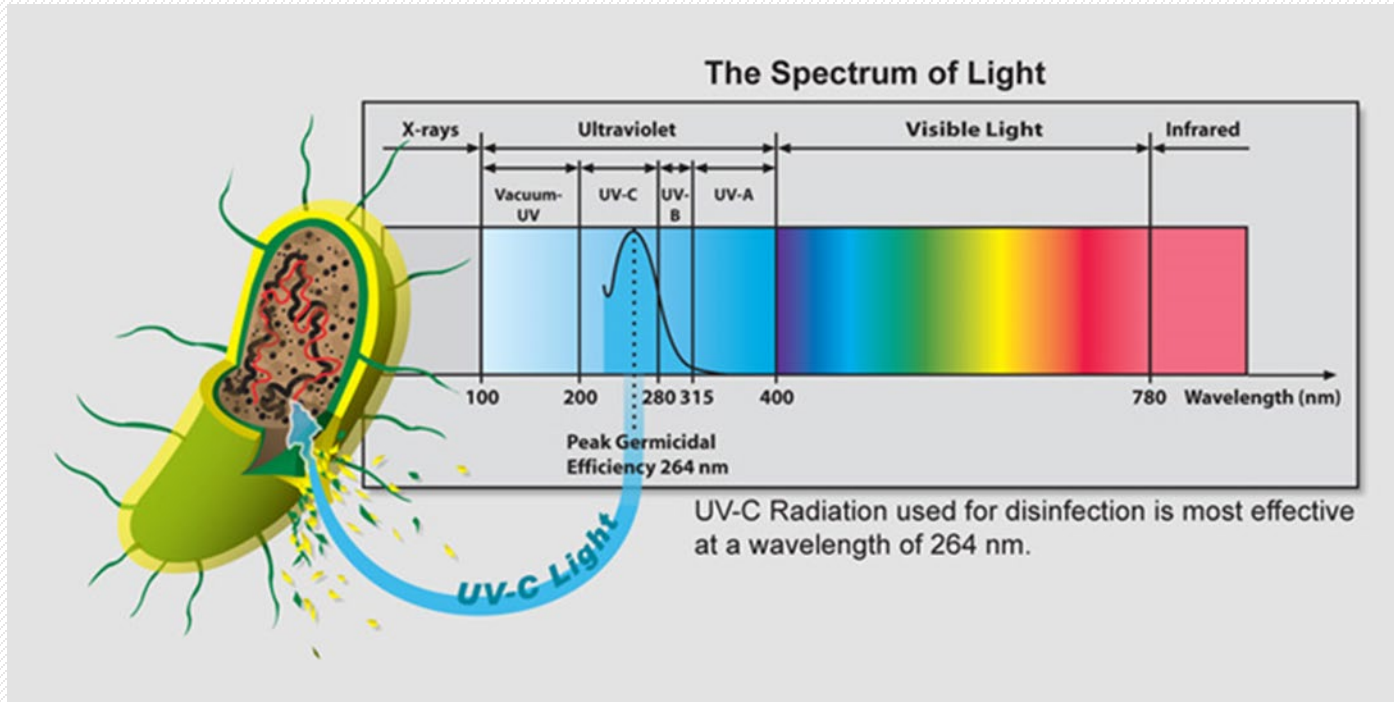
UV Replacement Project: Conceptual and Preliminary Design, and Equipment Preselection Services

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// Why UV Disinfection?



UV light is effective at inactivating COVID-19

1. Germicidal UV light ranges between 200 and 300 nm.
 2. UV photons penetrate the cell wall of the microorganism.
 3. UV energy alters the DNA structure.
 4. The microorganism is “inactivated” and rendered unable to reproduce or infect.
- * No byproducts remain in the wastewater.**

// Need for Project



Aged/deficient equipment

- Nearing 20 years old
- Significant advancements in UV technology in last 20 years

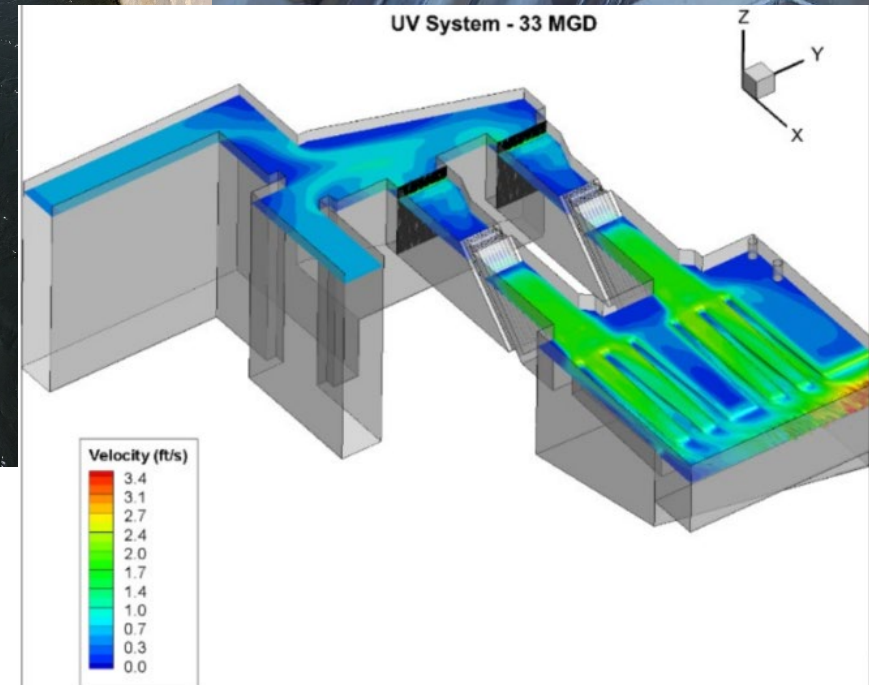
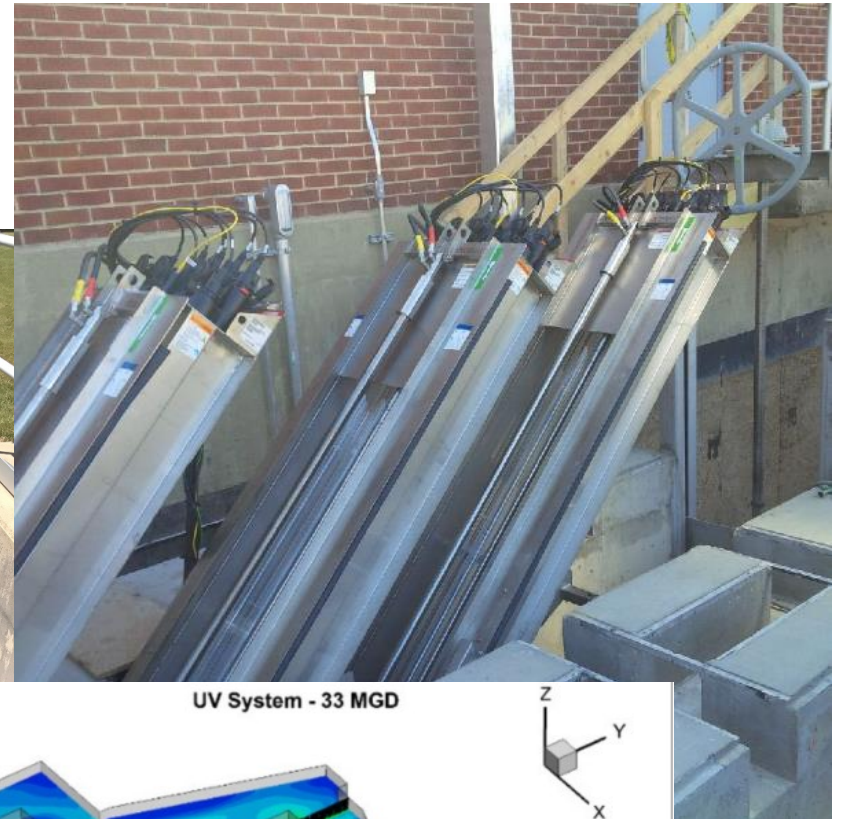
Existing capacity at peak flows

Improved controls



// Project Opportunities

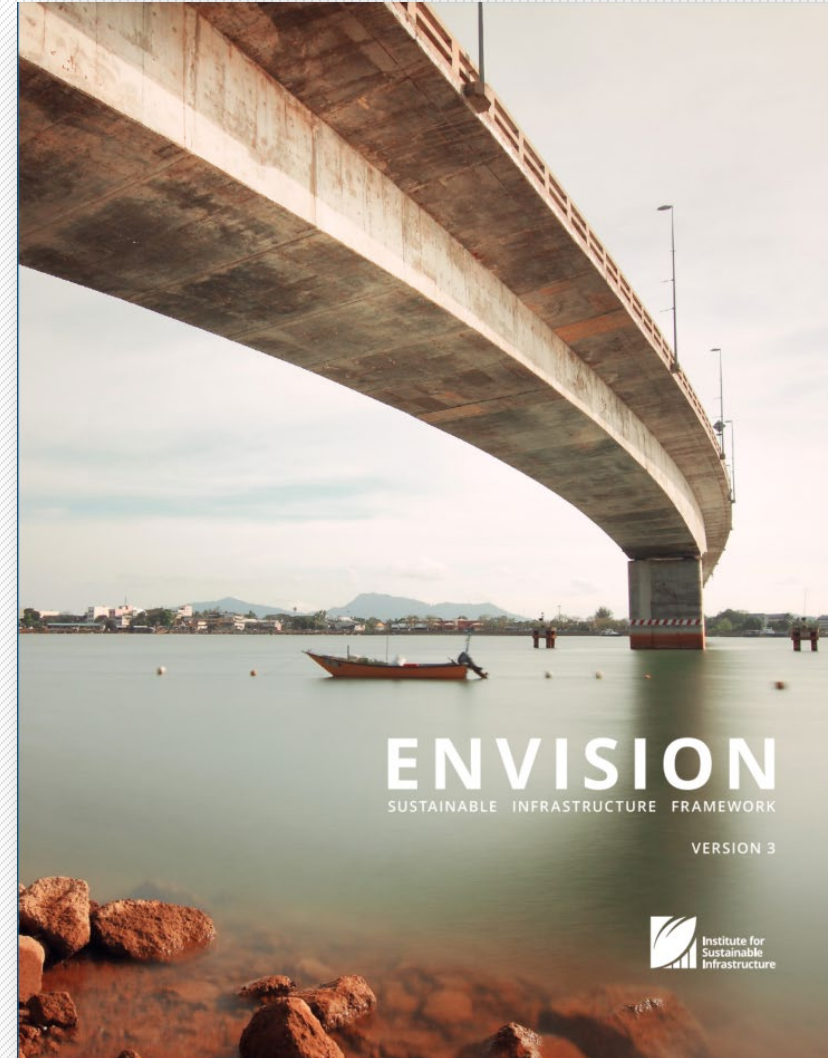
- Electrical savings estimated at \$160,000/yr
 - Envision sustainability assessment
 - Carbon footprint analysis
 - Grant funding
- Improved operations



// What is Envision?

Envision is a shared platform for effectively collaborating and communicating around the complex concepts and challenges of sustainability. It is organized around five categories:

1. *Quality of Life*
2. *Leadership*
3. *Resource Allocation*
4. *Natural World*
5. *Climate and Resilience*



// Project Scope Summaries

- Demolition of existing equipment
- Construction of replacement system and related components estimated between \$8 and \$10 million
- Integration with existing facilities
 - Reuse of existing basin infrastructure
 - Reuse of existing electrical infrastructure
- New controls for more remote operation and monitoring
- Construction sequencing
- Coordination with other ongoing projects

// Engineering Scope Summaries

- Project Coordination
 - Regulatory and funding coordination
 - Coordination workshops
- Basis of Design
 - Collimated beam testing
 - Documentation for WDNR
- Preliminary Engineering and UV Equipment Preselection
 - Hydraulic and CFD analysis
 - O&M analysis
 - Sustainability analysis
 - Structural, electrical and controls
 - UV equipment preselection



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Collaborative
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Thank you!!

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// Who We Are: Carollo Engineers

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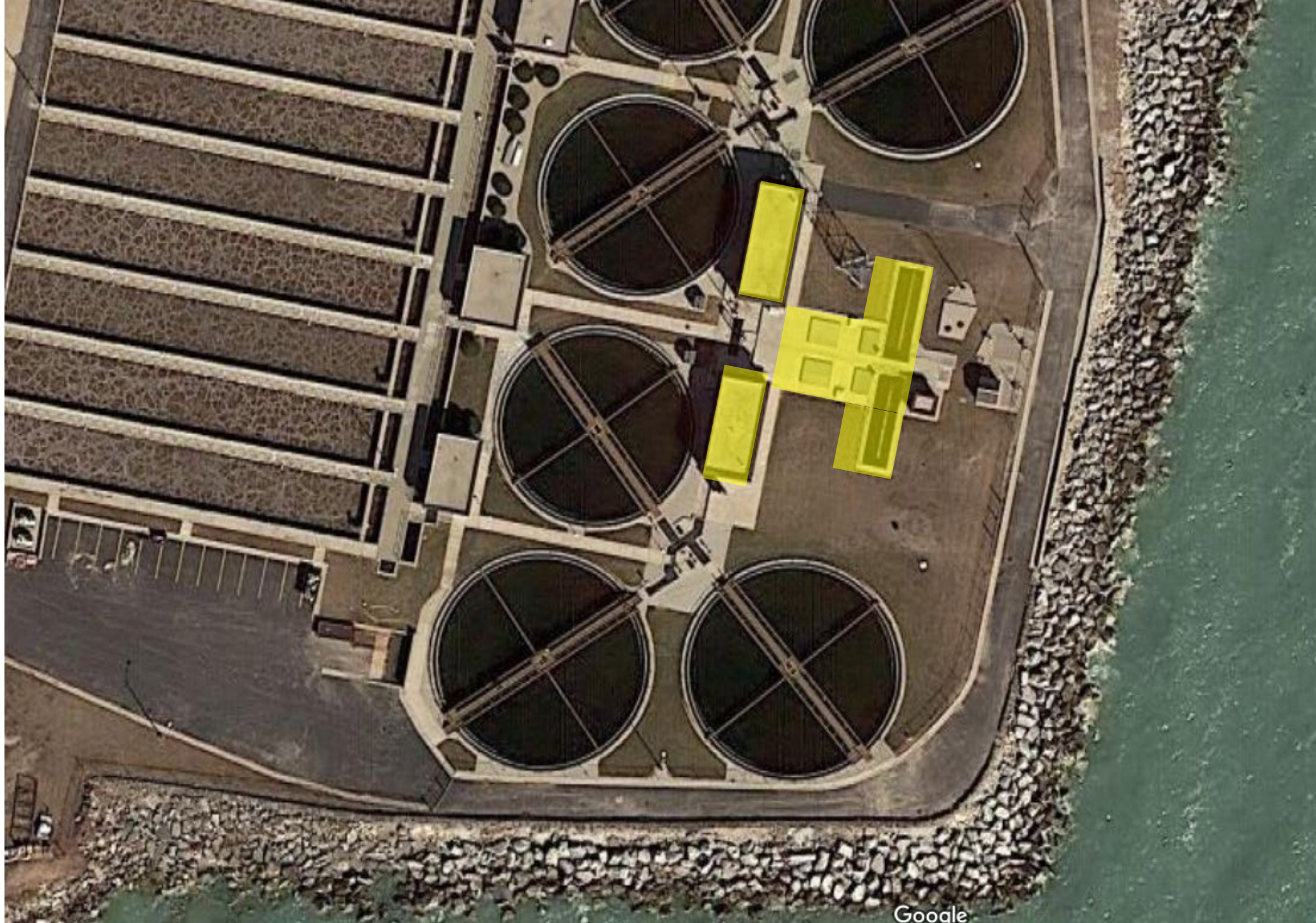
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Google