Dave Ehlinger

From: Tim Swadley
Sent: Saturday, July 29, 2023 9:35 AM
To: Dave Ehlinger
Subject: FW: Stoughton Hydro Power Station Building - UW Madison Capstone Class
Attachments: RFP Stoughton hydro bld Re-use 6-20-23.docx

You may be contacted by Jan. He said there is no cost to do the project. I believe he is hoping g to get on the next RDA agenda.

Sent from my U.S.Cellular© Smartphone

-------- Original message --------
From: Jan Kucher <jckucher@wisc.edu>
Date: 7/28/23 4:57 PM (GMT-06:00)
To: Tim Swadley <TSwadley@cityofstoughton.com>
Cc: Pete Manley <manleypc@gmail.com>, david@pluymers.com
Subject: Fw: Stoughton Hydro Power Station Building - UW Madison Capstone Class

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

As I mentioned, I teach the civil engineering Capstone class here at UW-Madison and we look for design projects for the student's last semester at no cost to an owner. The Stoughton Hydropower Adaptive Reuse design would be a great project for this fall.

For the class, the 5-person student team prepares a proposal as if it were an actual competitive project. After award, the team contacts the owner to get site specific information (boring logs, topography, utilities, etc). Each team has 2 experienced engineers as mentors to guide them along with two adjunct professors to instruction.

Next, teams look at project alternatives for detailed analysis in a preliminary engineering report and presentation. They then obtain input from the owner and confirm which alternative to proceed with. The team then moves to the final design and abbreviated plans and specifications with a final presentation. The student products are conceptual in nature, however the value to owners is in the range of $10,000 to $15,000 if a consulting engineer were hired for a conceptual study.

The following link provides information on capstone:
https://ncees.org/award_winner_profile/university-of-wisconsin-madison-village-stormwater/

Additionally, Capstone recently received a 6th NCEES award. Senior Capstone Design Course for Civil Engineers Wins 6th NCEES Award - College of Engineering - University of Wisconsin-Madison.

We appreciate having real projects to challenge the student teams.
Please consider the capstone class to assist with future projects and contact me if you have questions. I would also be happy to meet with you to better explain the capstone class.

I understand from previous discussions with Pete Mandley and Dave Pluymers that I could brief the RDA on the capstone class at the meeting on August 9. Is this still on the agenda and could you please let me know more about what is needed? - Thanks.

Best
jan

Jan Kucher, P.E.
Adjunct Professor
Department of Civil and Environmental Engineering
University of Wisconsin - Madison
608-843-4679

From: Jan Kucher <jckucher@wisc.edu>
Sent: Sunday, July 16, 2023 4:02 PM
To: tswadley@cityofstoughton.com <tswadley@cityofstoughton.com>
Cc: Derek Hungness <derek.hungness@wisc.edu>; david@pluymers.com <david@pluymers.com>
Subject: Re: Stoughton Hydro Power Station Building - UW Madison Capstone Class

Tim
Hope you are having a great summer. I am attaching a draft RFP for the Hydro Power Station for your review and comment.
Please get back to me with comments or your approval to proceed.

Thanks
jan

Jan Kucher, P.E.
Adjunct Professor
Department of Civil and Environmental Engineering
University of Wisconsin - Madison
608-843-4679

From: Jan Kucher
Sent: Tuesday, June 20, 2023 7:05 PM
To: tswadley@cityofstoughton.com <tswadley@cityofstoughton.com>
Cc: Derek Hungness <derek.hungness@wisc.edu>; david@pluymers.com <david@pluymers.com>
Subject: Stoughton Hydro Power Station Building

Tim

Thanks for the time to discuss the power station reuse and our capstone class today.

I am attaching a draft RFP to introduce the project to our student team. The yellow hi-lited text is project specific and the balance is the typical scope of work. Your comments are welcome. Please provide your direct or cell phone number.

Also, I understand that I will give a brief summary of the capstone class and how we can help Stoughton at the August RDA meeting. Do you know how long I should talk and if I should bring a Power Point?

Best
Jan

Jan Kucher, P.E.
Adjunct Professor
Department of Civil and Environmental Engineering
University of Wisconsin - Madison
608-843-4679

DRAFT 6-20-23 KUCHER
REQUEST FOR PROPOSALS

Engineering Services for Hydro Power Station Building Adaptive Reuse
City of Stoughton, WI

September 7, 2023

Background/Project Description

Proposals are requested from qualified engineering firms for consulting services for adaptive reuse of the Hydro Power Station Building.

Built in 1911, the Stoughton Power Plant No. 1 is the earliest remaining element of Stoughton's municipality owned utility system. The plant generated DC electrical power from hydropower of a dam, head race and a tail race, all of which survive today.

Coordinate with the Redevelopment plan for the Riverfront, including: stormwater filtration, reduce run off, create habitat for wildlife along the river, provide access to the river for the community and create public green space along the river.

This project will develop plans for adaptive reuse of the historic landmark building. Adaptive Reuse will create a new contemporary use for the historic building. The new use should be compatible with the proposed overall redevelopment plan.

The Consultant is encouraged to think broadly and creatively about the adaptive reuse of the building. Repurposing this building into something new will not only transform the building, but this second life will be drastically different in purpose from the first use.

This project is part of a larger redevelopment of Stoughton's Riverfront. The overall project is a redevelopment of an 11-acre parcel within the proposed Tax Incremental District #8. The Riverfront Project site will be transformed into an exceptional riverside neighborhood that should utilize the recreational and natural resources of the Yahara River for all Stoughton residents. Incorporating the latest in green technology will be a priority.

The project consultant should consider:

- The societal value of the site; that is, the importance to the community use of a site.
- The potential for the reuse of the site; what this building can provide to support of future use of the entire project, the character and location of the existing site in terms of the proposed reuse.
- The historical importance of the site; in terms of both the physicality of the street-scape/river edge of the area, as well as of the role of the site in the community's understanding of the past.
- Incorporation of hydro power machinery and photos in the repurposed building for historic content.
- Economic possibilities and viability of adaptive reuse of the building.
- The construction of parking to the north, and a walkway on the southside of the building to link the new development to the east and Fourth Street to the west.

The budget for this project is to be determined.

Figure 1 – original hydro power building looking southeast

Mayor Tim Swadley (tswadley@cityofstoughton.com, 608-873-6677,or cell _____) is the owner contact, who can be contacted to schedule a site visit.

Information is available on-line at the following link.

http://stoughtonrec.com/riverpark

Scope of Services

The Proposal shall include necessary CONSULTANT discrete cost for services to complete the following major phases including:

- Preliminary Design Report
- Design and Preparation of Bidding/Contract Documents (Construction Contract documents)
- Construction phase services, including: Bidding Assistance, Construction Administration, on-site Construction Observation for the entire project, and Project Documentation.

Note, the proposal shall include the cost of construction phase services, however, due to the semester schedule, the construction phase services will not be performed by the design consultant.

The CONSULTANT shall provide the following:

A. Preliminary Engineering Design Report that shall include, at a minimum:

- Review and documentation of existing conditions,
- Critical review of previous studies and reports,
- List of pertinent regulatory codes and professional standards (explain the substance and why they are applicable and could restrain the design.)
- Evaluation of at least three alternative solutions to the problem. For each alternative, the analysis shall include at least four of the following **(with the associated calculation format):**

  - Construction engineering analysis. This may include development of site staging, sequence of construction, etc.
  - Environmental engineering analysis. This may include development of process design parameters such as sizing of individual treatment units, chemical feed systems, etc. It may include detection and remediation of hazardous waste materials, contaminated soils or fill or modification of existing pollution or contamination conditions.
  - Geotechnical engineering analysis. This may include geology and soil characteristics at the site; surface and groundwater flow patterns and their effect on structures and construction; design and spacing of dewatering wells or pits, feasible types of foundation systems and their expected capacities (ranges are acceptable for a preliminary design stage); conceptual illustrations of earthworks such as retaining walls, slopes, etc.
  - Hydraulic engineering analysis. This may include considerations of flow rate, head, and energy use, pipe, channel, and weir sizing, calculation of hydraulic grade lines, evaluation of groundwater flow toward wells, under dikes, dams and levees, sizing and selection of pumps and turbines with the analysis of system head curves where applicable. This may also include open channel flow, hydraulics of bridges, abutments and approaches.
  - Hydrologic/storm water engineering analysis. This may include development of the appropriate level of risk for designs, development of rainfall-runoff curves, management of severe rainfall events on pervious and/or impervious surfaces, development of runoff attenuation or treatment approaches, reduction of stormwater or combined sewer overflow pollution loadings.
  - Structural engineering and building design analysis. This may include conceptual illustrations of buildings and other structures needed; conceptual site plans and floor plans; selection of components, materials, systems, shell, structure, and sitework; engineer shall list expected dead loads, live loads, environmental loads, fire protection, corrosion protection, and other items as needed to prepare for final design.
  - Transportation engineering analysis. This may include traffic flow, traffic control, site distance evaluation, braking distances, geometric considerations, road, street, highway, trail or railroad cross-sections, vertical and horizontal geometry, coordination of differing types of traffic in parallel corridors and at crossings, etc.
  - Surveying and Geospatial. This may include determining and showing the X-Y-Z location of projects along with the location of property corners, property lines, setbacks, easements, clearances, etc. that locate a project and its internal components with respect to the surface of the earth.

- **For each alternative solution evaluate the following:**
  - Environmental impacts (environmental sustainability).
  - Evaluate energy use.
  - Ability to engage the community during and after construction (social sustainability).

- Project capital, land and right-of-way, and operation & maintenance, and life cycle costs. Discuss how the entire project will be financed (economic sustainability).
- Accommodations for electric vehicle recharging.
- Accommodations for bicycle traffic and parking.
- Project schedule (to start after the design) to include construction, staging, and implementation / startup aspects.

- **For the Alternative Solution, Include the following tasks:**
  - Evaluate the sustainability of the selected alternative and its compatibility with documented standards. Examples include Leadership in Energy and Environmental Design (LEED), or the ENVISION checklist/scorecard available on the American Society of Civil Engineers Website.
  - Develop and present the anticipated schedule for the selected alternative including time required for planning, design, construction contract documents, permit preparation, regulatory review and approval, advertising, opening of bids, signing of contracts, construction, construction documentation, commissioning and completion of the final punchlist and project completion closeout
  - Develop and present a preliminary Engineer's Opinion of Probable Cost (OPC) for the completed project.
  - Prepare a Geotechnical Report
  - Develop and present a summary of CONSULTANT's services completed during preliminary design in the monthly project management report.
  - Recommend the most feasible preliminary engineering alternative, using an appropriate decision-making tool.
  - OWNER to provide comments, feedback, and direction on CONSULTANT's recommendation.
  - Confirm the recommended alternative with the OWNER.
  - Integrate OWNER comments as appropriate, and proceed to the construction contract documents. Present Preliminary Design Study methods and findings to Judges and Peers.

B. Construction Contract Documents (Project Manual) for the recommended alternative (or the OWNER-selected alternative) must include:

- Final engineering design presentation to judges and peers.
- Drawings that detail the construction of project components (including plans, sections, profiles, and details) in four CONSULTANT selected disciplines of engineering as described above.
- Contract Front End Documents (bid form, contract, bonds, general conditions, supplementary conditions, etc.)
- Technical Specifications for project components in four CONSULTANT selected disciplines of engineering as described above.
- Final Geotechnical Report.

The final design documents shall include a separate appendix (noted as "For Owner's Use Only") to include the following:

- ABET calculations (in calculation format)
- Final opinion of probable costs, to include capital, operation & maintenance, and life cycle costs,
- Project Schedule for implementation of the selected alternative

C. Bidding and Construction Related Services (To be provided as part of the Project Proposal, but is not included with class activities). Due to the semester schedule, the construction phase services will not be performed by the design team. However, services are to include:

- **Submittal to Regulatory Agencies for permitting**
- **Bidding Assistance** shall include responding to questions from potential bidders and issuance of addenda.
- **Construction Administration** shall include review of bids and recommendations on award of construction contracts, review of contractor's submittals including but not limited to review of insurance and bonds, shop drawings, periodic pay requests, response to contractor questions and issuance of change orders.
- **Construction Observation** shall include conducting a preconstruction conference, facilitation of weekly progress meetings, full time on-site observation of critical construction activities (estimated at 40 hours per week), assembly of operation and maintenance manuals, substantial completion with final inspections, and development of final punch lists.
- **Completed Project Documentation Services** shall include both a digital copy of all instruments of service including reports, as-built (record) drawings, specifications, presentations, meeting summaries, public comments, project documentation, and other documents created or obtained by the CONSULTANT as part of the project.

D. OWNER Communications

Upon acceptance of the written proposal, the CONSULTANT shall adhere to the following expectations pertaining to CONSULTANT/OWNER communications:

- Project manager shall be the designated communication liaison to handle all email and telephone communication between the OWNER and the CONSULTANTING team
- Clearly communicate all due dates, deadlines, and dates of presentations
- Provide at least one week advance notice for all meeting requests including an accompanying MS Outlook calendar invite for OWNER representatives
- Provide a minimum of **three dedicated meetings / calls** to discuss design plans, provide feedback, and discuss OWNER vision at the following points:
    - Initial meeting/site visit
    - Preliminary design presentation follow-up
    - Approximately 2 weeks before final presentation

    Note: additional meetings may be requested by OWNER or CONSULTANT
- Document OWNER communication status on project management reports
- **Provide the OWNER with an electronic version of the draft Preliminary Engineering Report for feedback. CONSULTANT shall integrate OWNER's comments as appropriate and proceed to final design.**
- Provide the OWNER with an electronic version of the Preliminary Engineering presentation slides, final Preliminary Engineering Report, the final Construction Contract Documents, and the final presentation slides.

Selection Criteria and Submittal Requirements

The owner is using a **Qualification Based Selection Process**. The criteria for selection will include: professional competence, project management approach, technical approach, ability to resolve challenges,

available resources, and quality control/assurance initiatives. A fee estimate for engineering services is required, however, it is not part of the consultant selection criteria. The specific submittal requirements for proposals are detailed below.

Proposal Submittal Requirements

Written proposals from CONSULTANT's shall not exceed 16 pages (excluding cover letter, cover, table of contents, resumes, and fee proposal). The proposal shall include the following:

- Signed cover letter, not exceeding one page. This shall be bound with the proposal.
- Cover sheet
- Table of contents
- Statement of interest, explaining why your firm wants to perform these design services. This statement shall discuss the CONSULTANT's vision for the project and how it mirrors the OWNER's goals (not to exceed one page).
- Description of the purpose and scope of the project, showing that your firm understands the project objectives and its constraints. This shall include a listing of pertinent regulatory codes and professional standards that must be met for the project (not to exceed two pages.)
- Description of the proposed project approach, including an organizational chart listing key individuals and their project roles and responsibilities, and methods that will be used to monitor the design schedule and design budget. The approach shall focus on design services, not construction services (not to exceed three pages).
- A work plan describing the sequence of steps the CONSULTANT proposes to follow to take the project from initiation through completion of the bidding documents (not to exceed two pages.)
- Excel table with tasks, staff category, and work hours (not to exceed one page).
- Presentation of your ideas and concepts to meet the project requirements (not to exceed two pages).
- Statement of qualifications for the firm, showing why your firm is qualified to provide the services described in the project approach (not to exceed two pages.)
- Summary of qualifications for the members of the team, including a description of key team member assignments for the four project specific key discipline areas (e.g., environmental engineering, structural engineering, geological engineering, construction engineering, etc.) and showing why each person is qualified to provide their discipline-specific design services (not to exceed three pages).
- Gantt chart with your firm's proposed project schedule (after the proposal is approved) for both design and construction, with emphasis on the design services. This chart shall be limited to a single page, which may be 11" x 17" if needed for readability.
- Description of the proposed invoicing methodology (not to exceed one page).
- One-page resume for each team member, edited for relevance to the project.
- Fee proposal submitted (in a separate envelope) to be used only as a basis for negotiation with the selected firm (no page limit). The proposal must include actual estimated fees for consulting services provided **(not time related to UW class activities).**

The proposal shall use 12-point font and 1-inch margins.

Interested CONSULTING firms shall submit 2 paper copies of the following:

- Signed cover letter, to be bound with the proposal.
- Bound hard copy of the proposal
- Sealed 10" x 13" envelope that contains the fee proposal, including a marked-up copy

of your Firm's proposed Engineering Agreement. The fee envelope shall be bound at the end of each copy of the proposal, with the project title, firm name, team number, and date on the envelope.

One electronic copy of the proposal in PDF format shall be uploaded to the course web page. The electronic copy shall be limited to one single file including the signed cover letter, the proposal, marked-up Engineering Agreement and the fee proposal.

The proposal shall be addressed to:

Jan Kucher, P.E. Adjunct Professor (Acting as Agent for the OWNER)
2346 Engineering Hall
1415 Engineering Drive
Madison, WI 53706

The proposal shall be submitted by the following deadline: **September 19, 2023 at 7:45 AM.**
Late proposals will not be accepted.

A presentation of the team's proposal will be required on **September 19, 2023**. Selection will be made immediately following the presentation and the design effort will begin with a project kick-off meeting.

Supporting information:

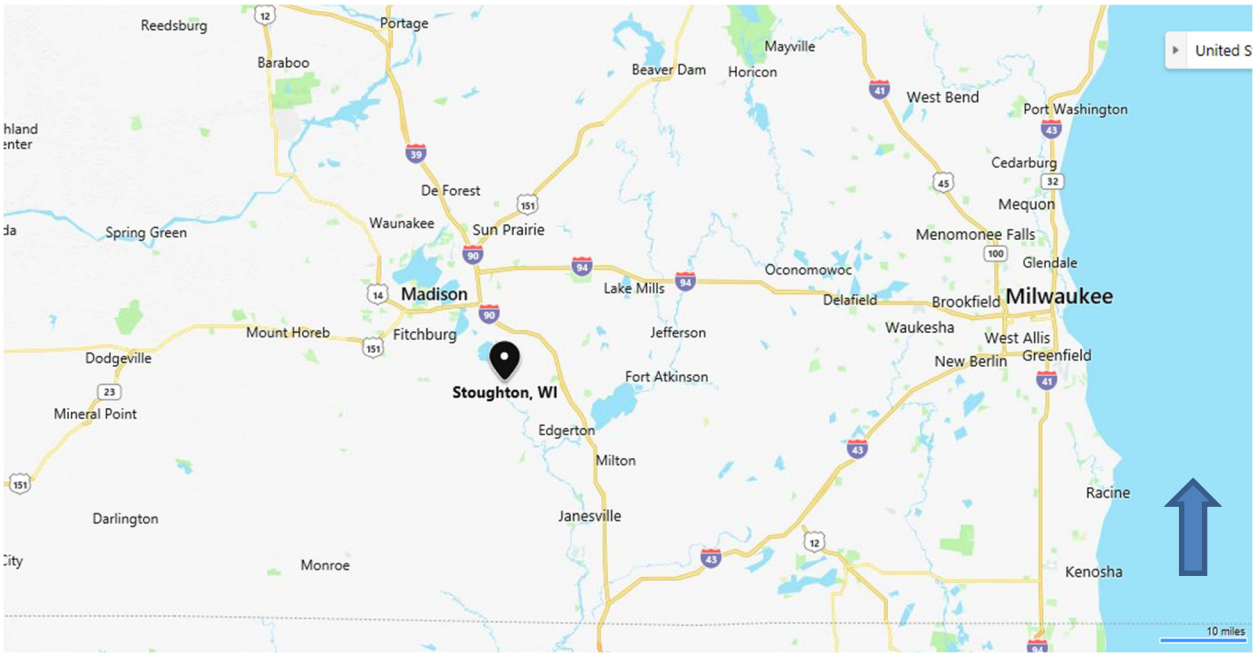

Figure 2 - Location Map

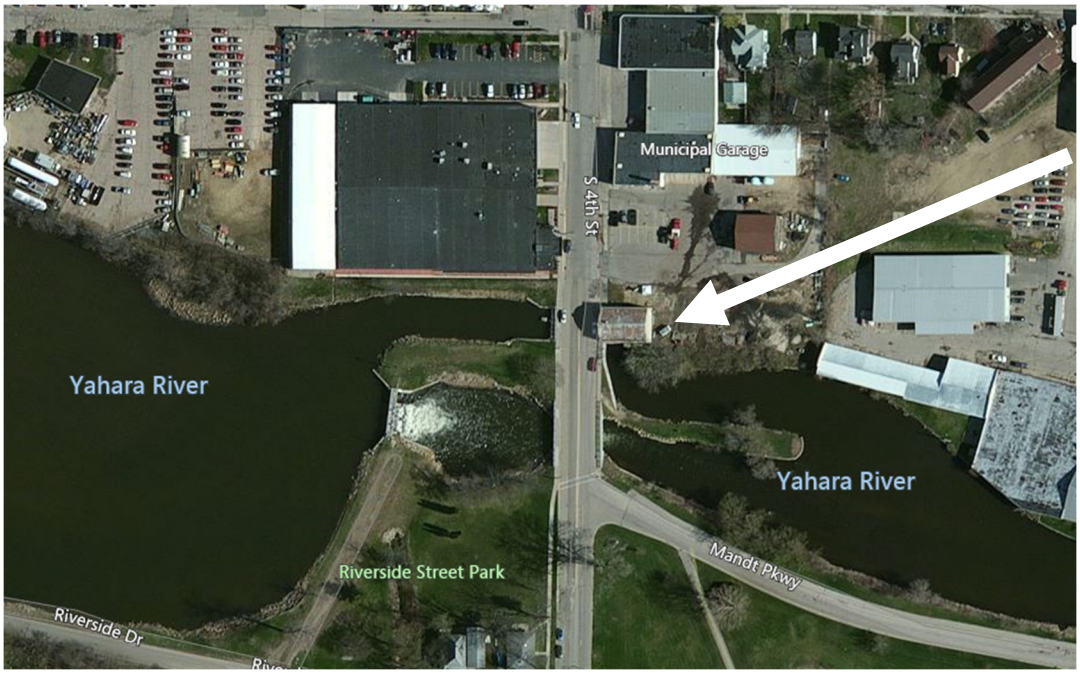

Figure 3 - Building Location - NTS

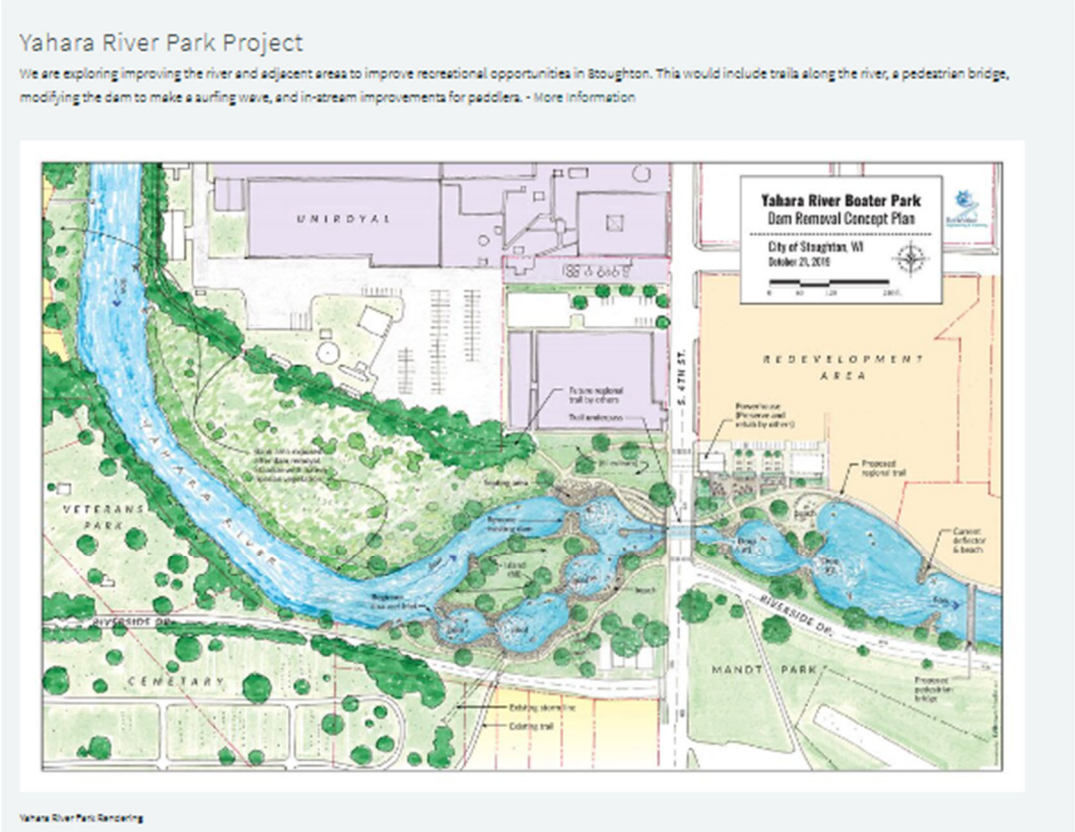

Figure 4 – Conceptual site plan