



10th Street Recreational Wave Viability Summary Report

October 28, 2024



The City of Calgary's River Engineering Team was requested to assess the feasibility of including a recreational wave park as part of the 10th Street Gravel Bar Flood Mitigation Project. A conceptual design report for the wave park was developed by the Alberta River Surfing Association (Surf Anywhere, 2019) which suggested the wave could conservatively provide up to \$1.8M/year in economic benefit to Calgary's economy as well as have numerous social benefits for the area and downtown in general.

This report reviewed the efficacy of a recreational wave at this location by assessing the potential wave for:

- The safety of recreational waves in general and compared to other recreational activities;
- Whether a recreational wave would hydrologically/hydraulically function at this location;
- The potential morphologic and sediment transport maintenance concerns;
- The geotechnical considerations;
- Water quality concerns related to river use in general and at this location specifically;
- Archeological or cultural impacts;
- Material management and constructability considerations;
- Regulatory approvals and navigation concerns in particular;
- The ecological impacts from a wave particularly on fish and their movement;
- How the wave would be operated and maintained in the long term;
- Impacts to existing utilities; and,
- Public support or concerns for the wave, and alignment with the adjacent Sunnyside barrier, Lot 6, and River Walk West Projects.

Based on the review of these factors, there does not appear to be any technical, regulatory, or safety reasons to exclude a recreational wave from the project. From a technical perspective, this location is acceptable for this type of feature due to the hydraulic and geotechnical conditions.

The potential economic and social benefits also appear to be valid based on the performed literature review which found the economic benefits to recreational waves ranged between \$50CAD-\$100CAD per user per day. The ARSA (2019) estimated usage of 30,000 user visits per year also appears valid considering the usage seen at other similar recreational waves, usage of other similar recreational features in Calgary (i.e. Glenmore Canoe Club and Harvie Passage), and the number of pedestrians using the regional pathway along that stretch of river.

The preliminary design for the gravel bar project incorporating a potential recreational wave is nearing completion and the resulting design can mitigate the flood risk while also creating a successful riverfront and recreational wave feature. The current Class 5 (+100%, -50%) project cost estimate is approximately \$10M, of which \$6M is for the flood mitigation component and \$4M is for the in-river recreational wave components. The \$4M recreational component is proposed to be paid for from a combination of City funding, Provincial and Federal grants, and public donations.



The project aligns well with City’s overall strategic direction of creating a “great place to live” as well as numerous other business unit goals including the Downtown Strategy, the Recreation Master Plan, the River Access Strategy, the Riparian Program, and The Eventful City Strategy.

Based on this analysis and internal direction, the recreational wave will be included in the detailed design phase of the 10th Street Gravel Bar project. The earliest that the recreational wave aspects of the gravel bar project could be constructed is 2027, although that will be dependent on regulatory approvals, funding, and development of an acceptable operational plan.