



Municipality of Anchorage, Alaska
Parks & Recreation Department

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MEMORANDUM

Date: April 11, 2024

To: Parks & Recreation Commission

Cc: Mike Braniff, Director; Taylor Keegan, PLA, Parks Superintendent

From: Tanya Hickok, PE, Senior Park Planner / Project Manager

Project: PRC 2024-02: Jodhpur Bluff Bank Stabilization

INTRODUCTION / BACKGROUND

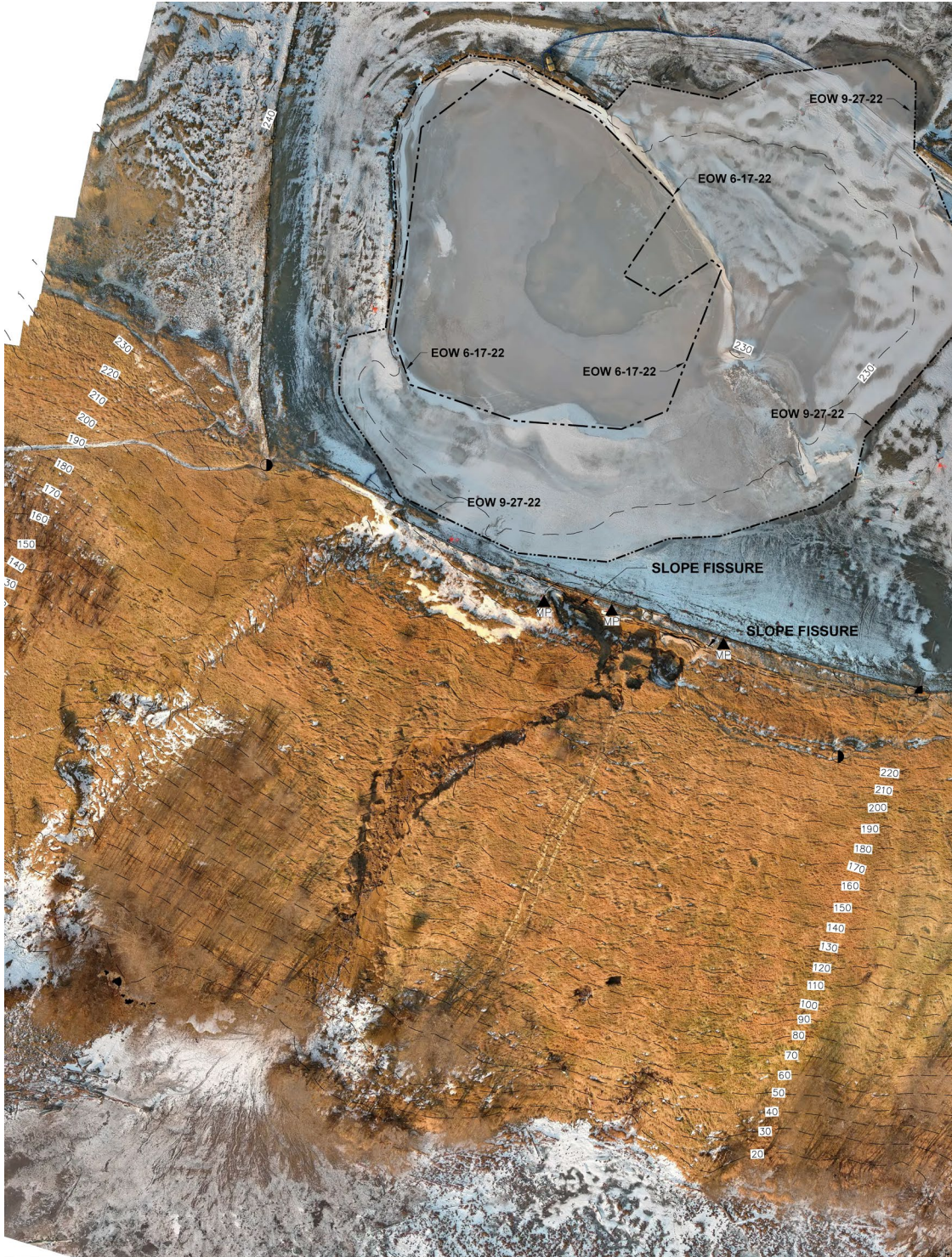
The Municipality of Anchorage Parks and Recreation Department (APR) has been working with federal and state partners to address bluff instability at Kincaid Park following the 2018 earthquake and 2022 bluff erosion event. APR and its engineers are actively monitoring the Jodhpur Bluff at Kincaid Park and working with the Federal Emergency Management Agency (FEMA) to stabilize the bluff and repair erosion from these events.

Jodhpur Bluff is in the southeast corner of the 1,400-acre Kincaid Park. Jodhpur Bluff is known for its sand dunes and motocross track. The track sits on top of an approximately 240-foot bluff overlooking the Turnagain Arm Wildlife Refuge. The track consists of a series of manmade sand and gravel courses on the north end of the area and a pond (which provides water for dust control on the track) immediately adjacent to bluff. During the November 30, 2018 earthquake, the crest of the slope experienced distress with the formation of tension cracks running parallel to the crest of the slope, located between approximately 5 and 10 feet below the crest on the Turnagain Arm (downslope) side of the crest. Based on inspection during the summer of 2022, the cracks ran nearly the entire length of the slope crest, including in the area adjacent to the pond, had surface apertures of up to 6 inches, and depths of over 5 feet.

Based on recommendations of the geotechnical report, a contractor was engaged to pump water from the pond to lower the pond level and prevent overtopping of the slope crest, which still had over 2 feet in elevation remaining. During staging activities on November 2 (following a record precipitation season), the contractor observed erosion damage on the slope that had not been present during their prior planning visits to the site conducted approximately four to five days earlier. Based on surface observations, it was apparent that water had not overtopped the slope crest to flow directly on the slope surface because there was in-tact pond surface ice below the adjacent slope crest elevation at the head of the erosion scar. It is our geotechnical engineer's opinion that the pond water was able to seep through shallow loosened soils and voids (obscured from the surface but likely greater than 3 to 4 feet below the ground surface/slope crest) caused by the 2018 earthquake. Once the water had penetrated the established tension crack, the crack acted as a drainage path for more water to flow into the slope soils and compounded the erosion and damage to the slope. This event caused a

significant amount of soil to be transported down the slope, creating a debris fan at the toe on the tidal flats, and resulted in downslope movement of soils that remained adjacent to the erosion feature.

Figure 1: December 2022 Site Aerial



PROPOSED IMPROVEMENTS

The scope of work for this disaster repair includes excavation and regrading of the upper slope to achieve an approximate 2:1 slope and top coating the disturbed areas with a new vegetative mat. After conducting a geotechnical investigation for the site, it was determined that the excavated in-situ material be removed from the slope and replaced with a mix of the excavated materials with structural fill, compacted to a firm and unyielding state. A uniaxial geogrid should be placed within the fill at 2-foot intervals with the grid extending from the face of the slope to the back slope of the excavation and should be rolled out with its strong axis parallel to the fall line of the slope (hazard mitigation). The reconstructed slope should be established at a 3:1 angle from the base of excavation up to elevation 230, and not steeper than 2:1 above elevation 230. The backlands beyond the bluff crest will be sloped inland for a minimum of 30-feet between the new replacement guardrail and newly contoured pond. The geotechnical engineer recommended adding a geosynthetic clay liner to the pond to prevent any future earthquake subsurface failures between the pond and bluff (hazard mitigation).

Finally, all areas disturbed (including the additional fourth crack) will be stabilized with a combination of topsoil/seed, and a mix of natural revegetation (willow stakes, aspen saplings, etc.) (hazard mitigation) in order to stabilize the bluff slope.

Figure 2: Proposed Improvements Cross-Section

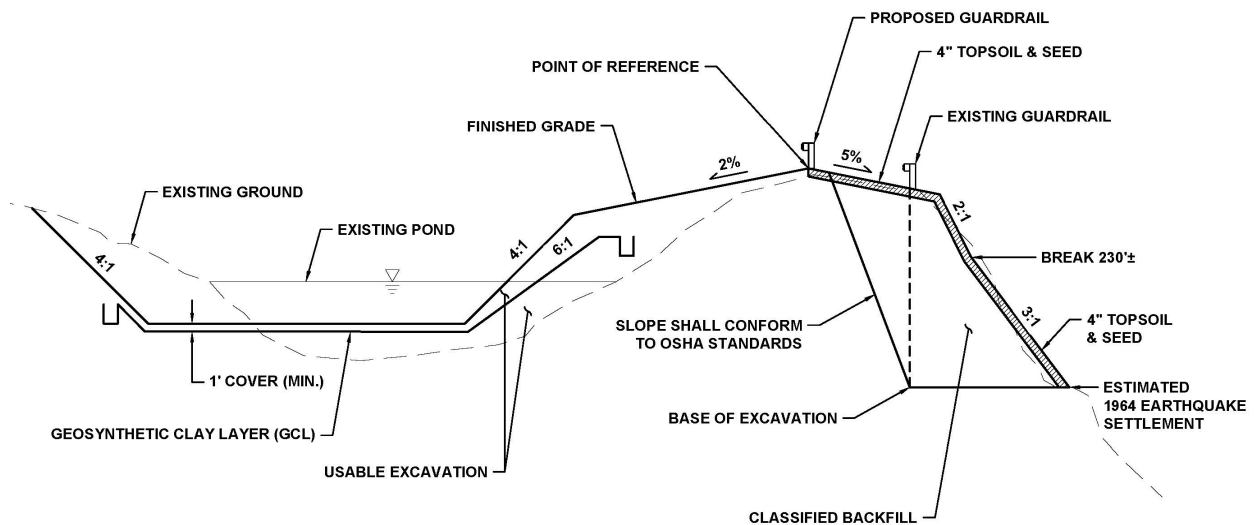
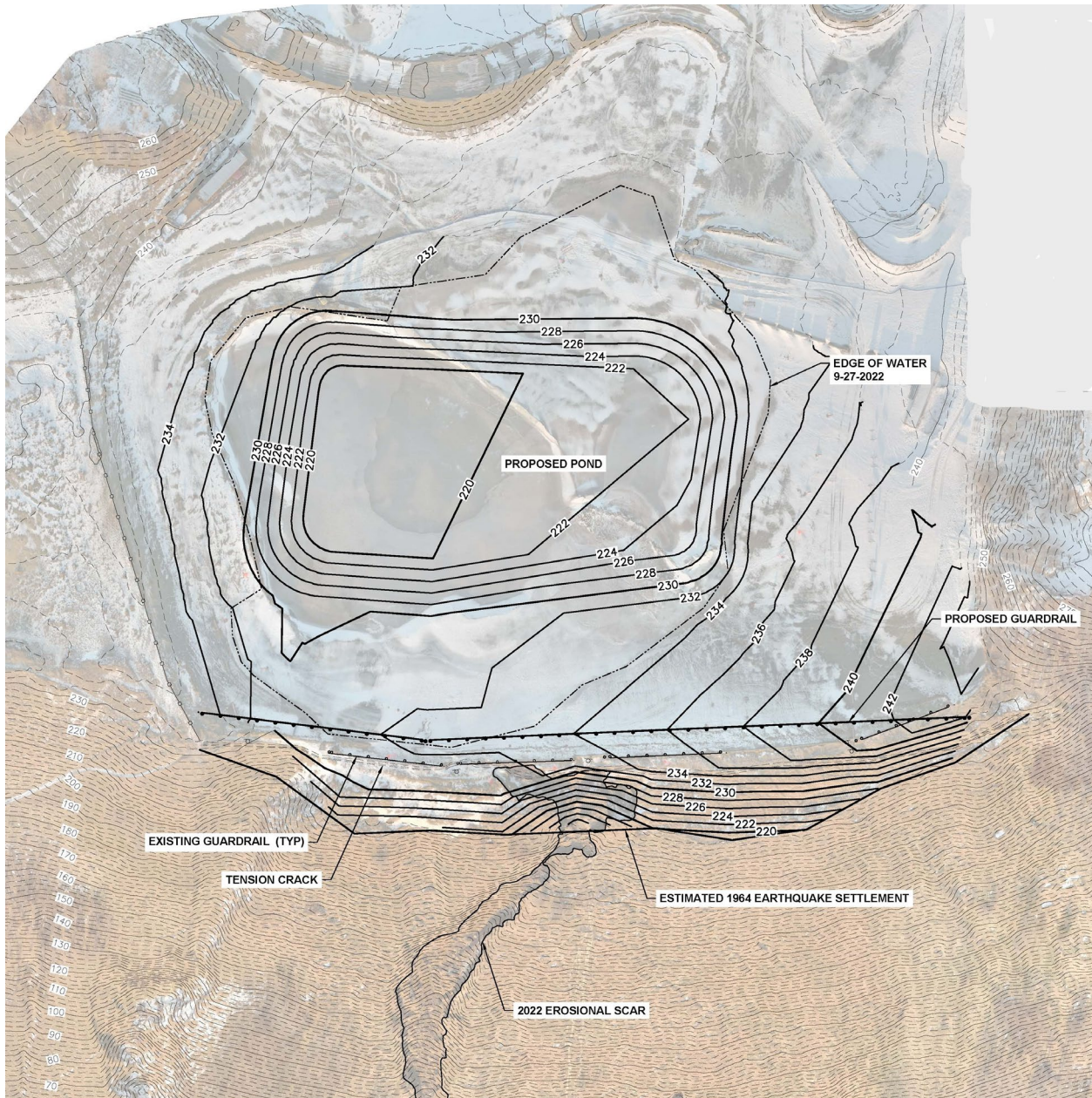


Figure 3: Proposed Plan View Improvements



PLANNING AND PUBLIC INVOLVEMENT

APR attended the Sand Lake Community Council meeting in March and received no objections or negative feedback from the community. APR is currently working with our consultants to submit for a Municipal Building Safety Fill/Grade Permit for the proposed improvements.

Due to the high erodibility of the existing soils along the bluff, construction should not occur during Anchorage's typical high rainy season (August). Keeping this in mind, the project team proposes to bid

the construction project this Spring 2024, with construction beginning in June 2024, with a 60-day construction period in order to establish early grass seed stabilization.

FUNDING

The proposed total development budget for this project phase is estimated at \$1,515,460 with the funding acquired from FEMA for 2018 Earthquake Disaster Relief.

STAFF RECOMMENDATION

The Anchorage Parks and Recreation Department recommends that the Parks and Recreation Commission support the Jodhpur Bluff Bank Stabilization at Kincaid Park Improvement project. The proposed project was identified and approved by FEMA for Earthquake Disaster Relief in order to stabilize the bluff from further erosion into the highly valuable Turnagain Arm Wildlife Refuge.



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PRC RES NO. 2024-02
Jodhpur Bluff Bank Stabilization Improvements
Kincaid Park

WHEREAS, the Anchorage Parks and Recreation Commission serves in an advisory capacity to both the Mayor and the Assembly; and

WHEREAS, the Anchorage Parks and Recreation Commission has the responsibility and duty to provide for the long term vision of our park system by ensuring that a balance of parks, natural resources, and recreation facilities provides for the health, welfare, and safety of all residents of the Anchorage Bowl; and

WHEREAS, the 2018 November Earthquake damaged the Jodhpur Bluff at Kincaid Park creating an unsafe and unstable bank, immediately adjacent to the Turnagain Arm Wildlife Refuge; and

WHEREAS, the Federal Emergency Management Agency (FEMA) identified and approved disaster relief funding for the bank stabilization improvements proposed at the Jodhpur Bluff; and

WHEREAS, the proposed bank stabilization improvements of Jodhpur Bluff includes hazard mitigation improvements to future protect the bluff from future erosion; and

NOW, THEREFORE, BE IT RESOLVED that the Anchorage Parks and Recreation Commission approves the proposed Jodhpur Bluff Bank Stabilization project submitted by the Department for Kincaid Park.

PASSED AND APPROVED by the Anchorage Parks and Recreation Commission this 11th day of April, 2024.

Chair
Parks and Recreation Commission

ATTEST:

Mike Braniff, Director
Parks & Recreation Department