

# **Storm Water Outfall Erosion Repairs at Huron Pkwy. & Hubbard**

## **Exhibit - A**

1. **Project Scope** – Repair existing 18” and 84” storm water outfalls located at the southeast corner of Huron Pkwy. & Hubbard Rd. intersection.

### **2. Existing Conditions**

- 18” U-M storm water outfall
  - Serves a catchment area of about 24 acres mostly owned by U-M
  - Failed manhole structure O-46
  - Dislocated and rusted CMP outlet pipe
  - High velocity discharge
  - Eroded channel
- 84” City storm water outfall
  - a. Serves a catchment area of about 750 acres owned by combination of City, U-M and privately owned residential & commercial land use
    - Scouring at the headwall
    - Undermining of foundation
    - High velocity discharge
    - Concrete pipe joint separation

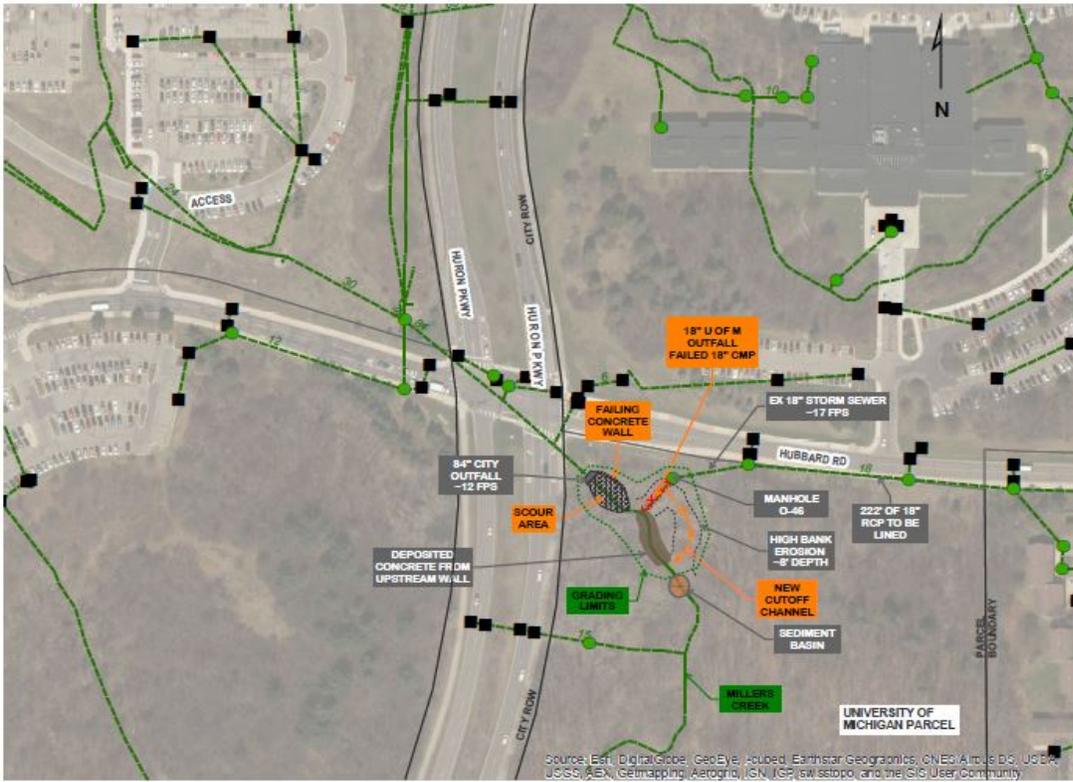
### **3. Repair Options**

- 18” U-M storm water outfall
  - Option A – Repair manhole O-46, install new drop structure and outlet pipe
  - Option B – Replace manhole O-46 with a new drop structure, new outlet pipe **(Recommended)**
- 84” City storm water outfall
  - Option C – Riprap basin and cross vanes
  - Option D – Riprap basin and cross vanes with live tree staking **(Recommended)**
- Common items for both outfall repairs
  - Temporary sediment basin
  - Gravel access drive from Huron Pkwy.
  - ROW permit for access, staging & laydown
  - Traffic control for lane closure and sidewalk closure on Huron Pkwy.
  - T&E species investigation
  - EGLE permit - JPA

### **4. Project Schedule**

- T&E species investigation : June-July 2020
- Design : July-September 2020 (DD, CD)
- EGLE permit : August-October 2020
- City of AA Review : July–September 2020
- Bid/Award : October 2020
- Construction Start : December 2020
- Project Completion : Spring 2021

## 5. Project Concept: Existing Conditions & Proposed Work



Existing Conditions



Proposed Work