

FloodRISE in the Tijuana River Valley

Project Overview and Tijuana River Valley Deliverables

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Project Overview

Scientific Agenda:

Developing modeling and mapping products that can *effectively* support flood risk management on several fronts

Agenda in Tijuana River Valley:

- 1) Conducted focus groups with stakeholders to understand mapping needs and wishes of different end-users
- 2) Produced flood hazard maps which reflect focus group input
- 3) Completed hydraulic and hydrologic analysis to support several on-going projects

Summary of Focus Group Results (TRV)

- 1) End-users desired maps showing **historic events**
- 2) Emergency responders requested maps that **included velocity information**
- 3) Natural resource managers were interested in **erosion potential**
- 4) Generally more interested in **magnitude of event than frequency** (how much water rather than how likely?)
- 5) More interested in **current rather than future conditions**

TRV Projects Supported

- 1) **Monument Road** Design
Informed the feasibility of alternative Monument Road designs and alignments on behalf of CA Department of Parks and Recreation
- 2) **Brown Fill** Removal
Evaluated the impacts of Fill removal alternatives on hydrodynamics in the TRV on behalf of the County of San Diego Parks and Recreation
- 3) **“pilot channel”** Dredging
Mapped the change in flood depths between a maintained and filled pilot channel

Maps available at:

bit.ly/floodrise_TRV

Technical memorandums available for **Brown Fill** Removal and **Monument Road** Design

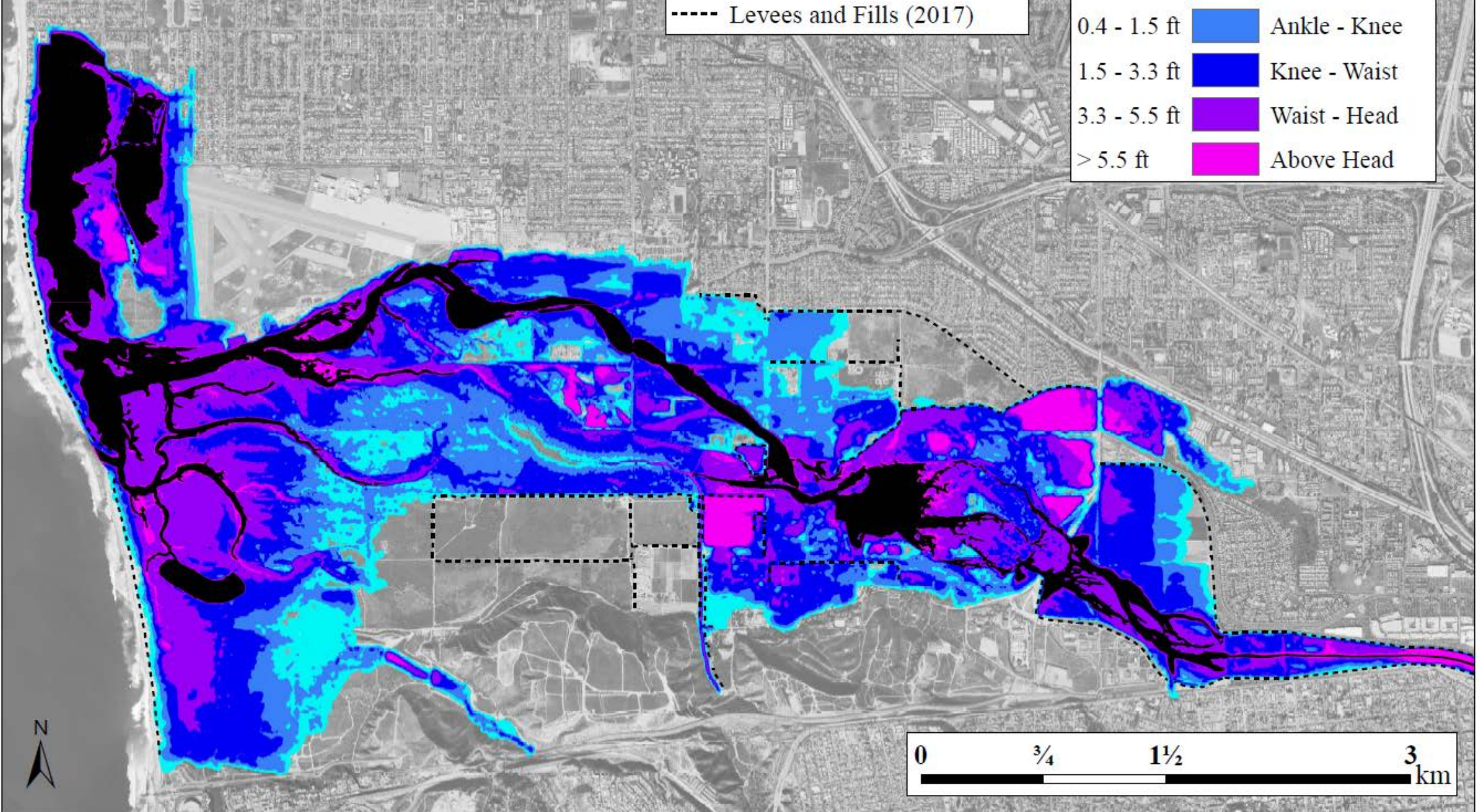
A) 1983 Tijuana River Flood
27,000 cfs (1983 peak discharge)

Contextual Layers

- Tijuana River (normal flow)
- - - - Levees and Fills (2017)

Flood Depths

< 0.4 ft	■	Less than Ankle
0.4 - 1.5 ft	■	Ankle - Knee
1.5 - 3.3 ft	■	Knee - Waist
3.3 - 5.5 ft	■	Waist - Head
> 5.5 ft	■	Above Head



A) Flood Shear Stresses
27,000 cfs (1983 peak discharge)

Shear Stress

< 0.02 lbs/ft²

0.02 - 0.045 lbs/ft²

0.045 - 0.26 lbs/ft²

0.26 - 0.7 lbs/ft²

> 0.7 lbs/ft²

Erodible Materials

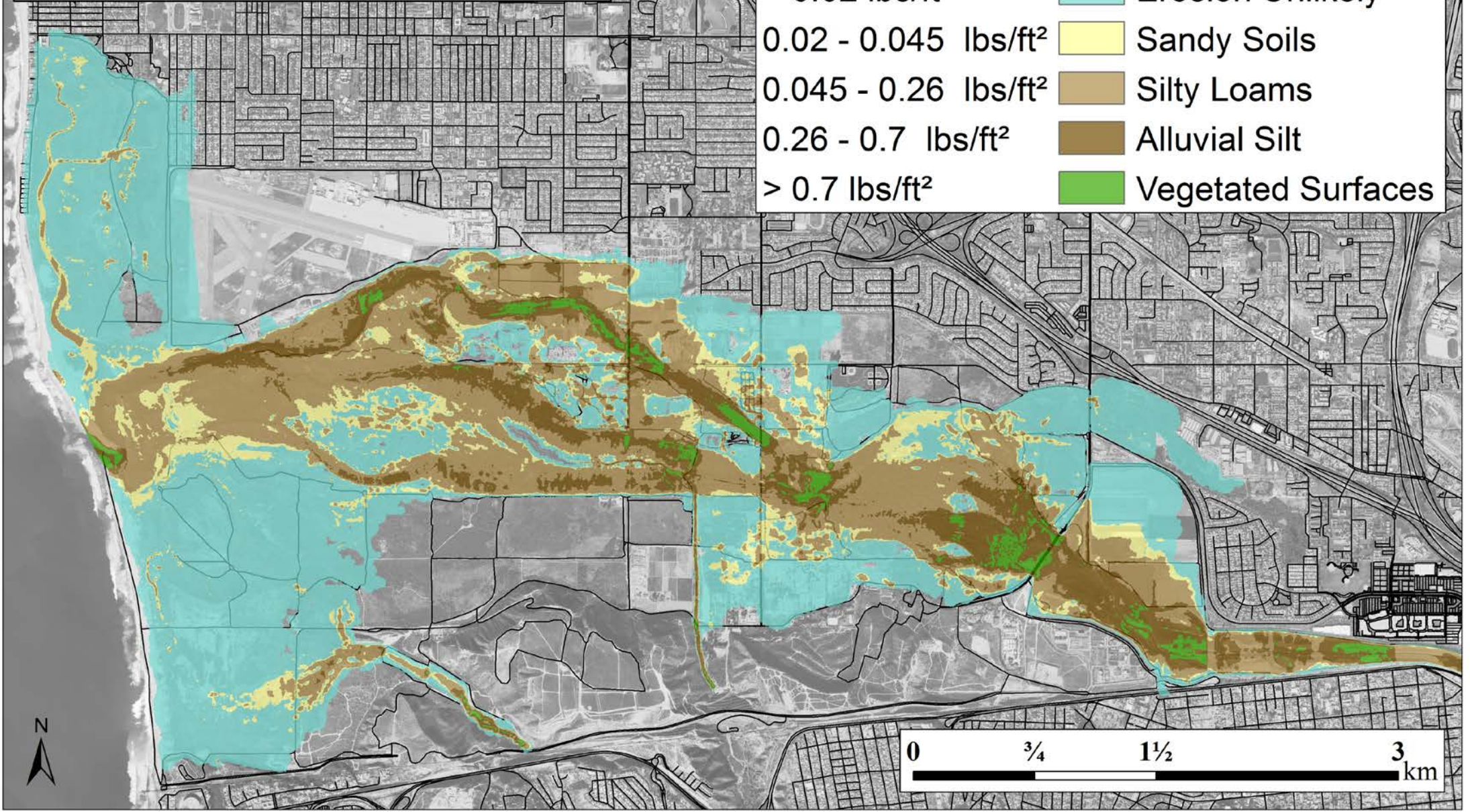
Erosion Unlikely

Sandy Soils

Silty Loams

Alluvial Silt

Vegetated Surfaces



A) 1983 Tijuana River Flood
27,000 cfs (1983 peak discharge)

Flood Forces

< 4.3 ft ² /s	Yellow	People Likely Stable
4.3 - 8.1 ft ² /s	Light Green	People Toppled
8.1 - 16.1 ft ² /s	Medium Green	Cars Displaced
16.1 - 27.0 ft ² /s	Dark Blue	Structural Home Damage
> 27.0 ft ² /s	Dark Purple	Homes Washed Away

