



Agenda

MPERA



Water Infrastructure Performance

Water Utilities

- KASKI - Kahramanmaraş Water and Sewerage Administration
- HAKU - Hatay Water and Sewerage Administration
- GASKI - Gaziantep Water and Sewerage Administration
- Adıyaman

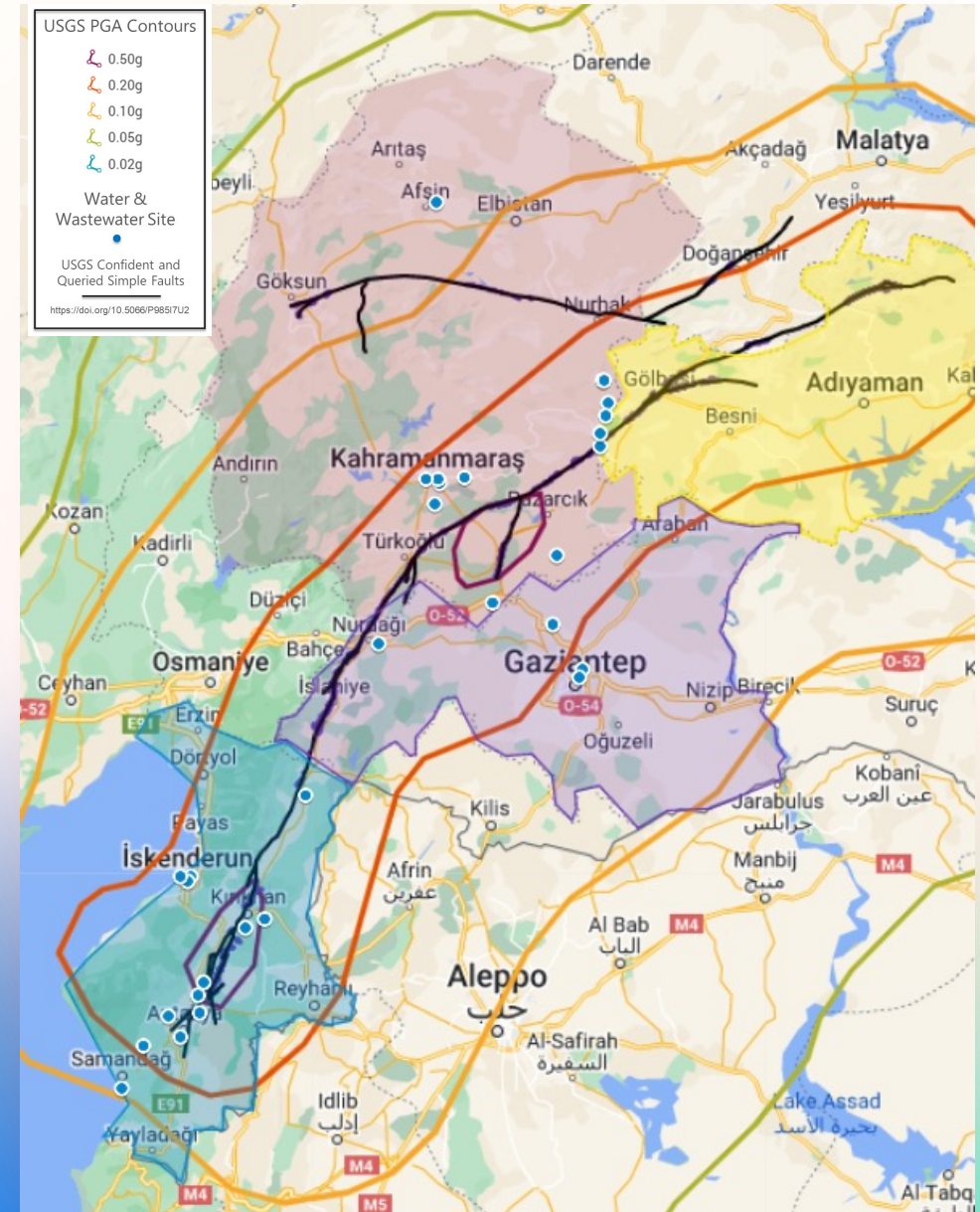
Pump Stations (3+)

Transmission Infrastructure (many)

Water Taps (4+)

Water and Wastewater Treatment Facilities

- Wastewater Treatment Plants (9)
- Water Treatment Plants (3)





Infrastructure Performance – Utilities



Infrastructure Performance - Distribution

Infrastructure Performance – Timetables

WW Infrastructure Performance – Earthquake Facilities



WWTP Narlia, Hk

- Estimated PGA/PG
 - 0.57g / 97 cm/s for M7.8
 - 0.03g / 13 cm/s for M7.7
 - 0.54g / 87 cm/s for M6.3
- Opened in 2019
- Located under structures
- Not in operation due to the damage to the membranes



WWTP Kirikhan, Hk

- Estimated PGA/PG
 - 0.60g / 97 cm/s for M7.8
 - 0.03g / 17 cm/s for M7.7
 - 0.14g / 12 cm/s for M6.3
- Opened in 2019
- No ground improvement
- Settlement around the pools
- Not in operation due to structural damage in the pools

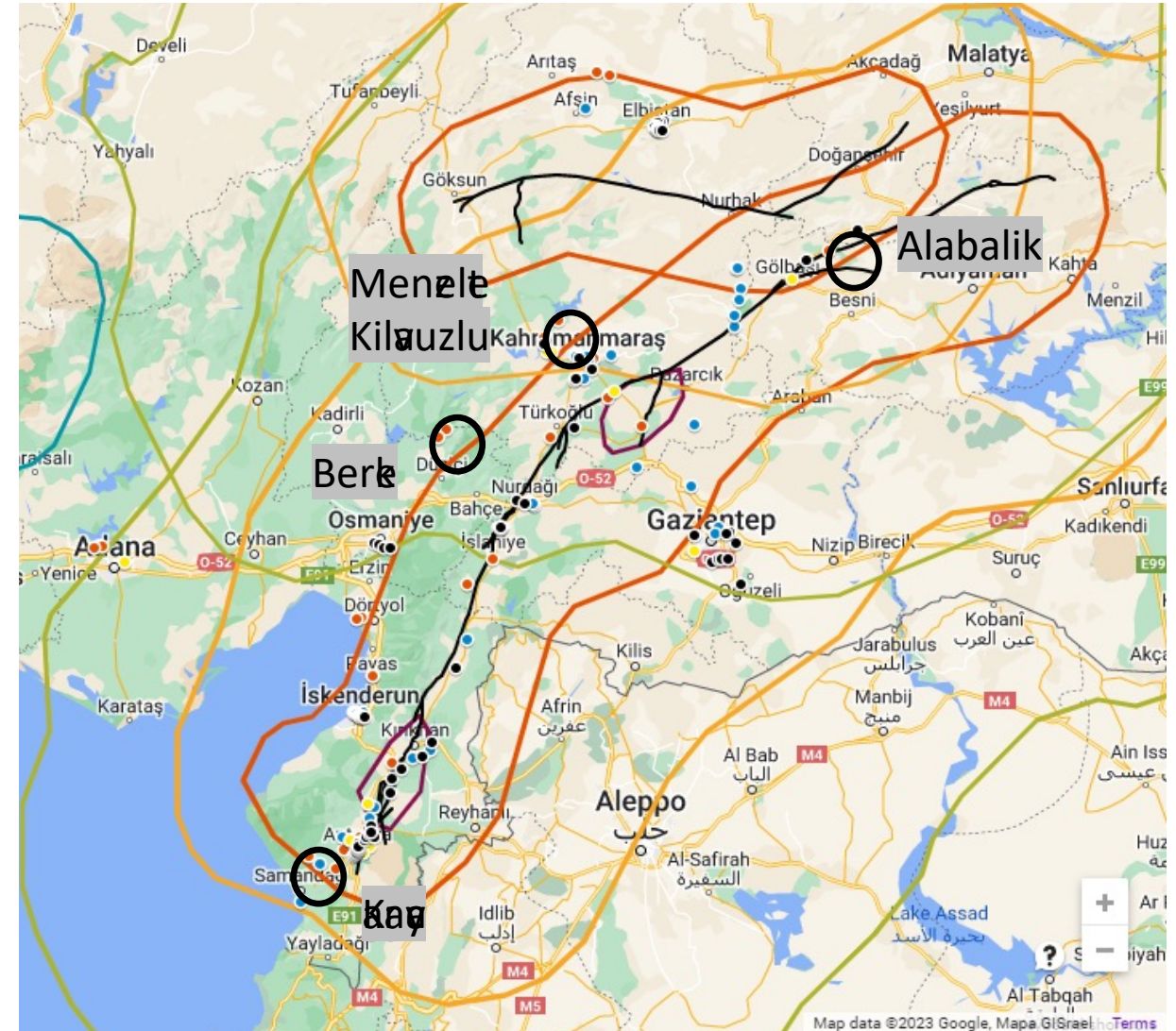


WWTP Seriql, Hk

- Estimated PGA/PG
 - 0.72g / 104 cm/s for M7.8
 - 0.03g / 12 cm/s for M7.7
 - 0.43g / 48 cm/s for M6.3
- Opened in 2017
- No ground improvement
- Significant settlement around structures – up to 0.85 ft
- Not in operation due to structural damage in the pools

Infrastructure Performance – Dams

- Embankment Dams
 - Sulansuyu
 - Sugu
 - Krala
 - Arikli
- Hydroelectric Dams
 - Alabalik (5 MW)
 - Menzele (124 MW 1992)
 - Kiluzlu (54 MW 2012)
 - Berke (504 MW 1999)
 - Karay (3.3 MW 1999)



Infrastructure Performance - Dams

■ Alabalik Dam

- 5MW river dam
- Near fault
- Slope stability issues upstream
- Cracking in some concrete structures
- Nearby landslides
- Estimated PGA/PGAs:
 - 0.40g – 83 cm/s for M7.8
 - 0.26g – 56 cm/s for M7.7



Infrastructure Performance

Transport Infrastructure Performance - Badly

Transportation Infrastructure Performance - Roads

- Türkiye, Kahramanmaraş



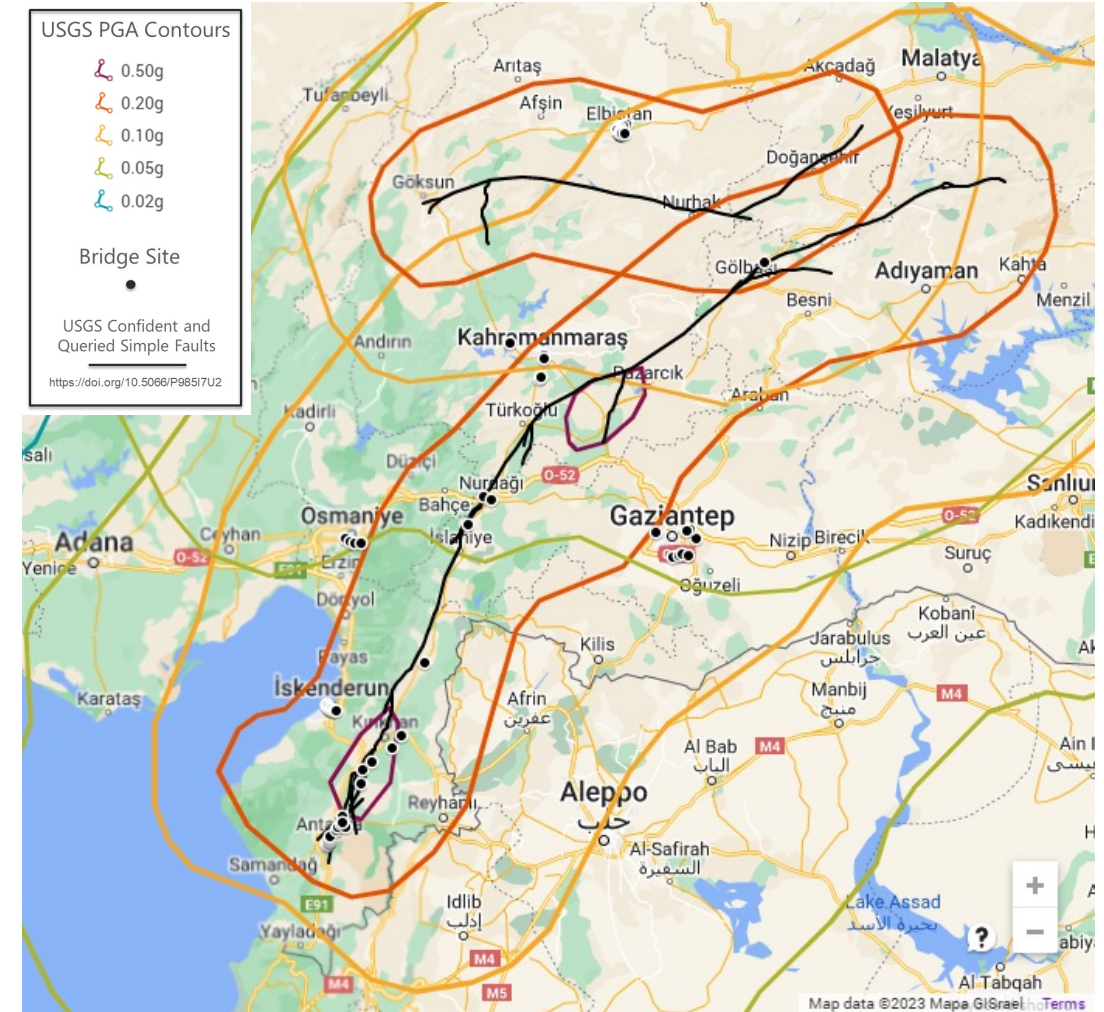
Transportation Infrastructure Performance - Bridges

■ Visited Bridges/Viaducts

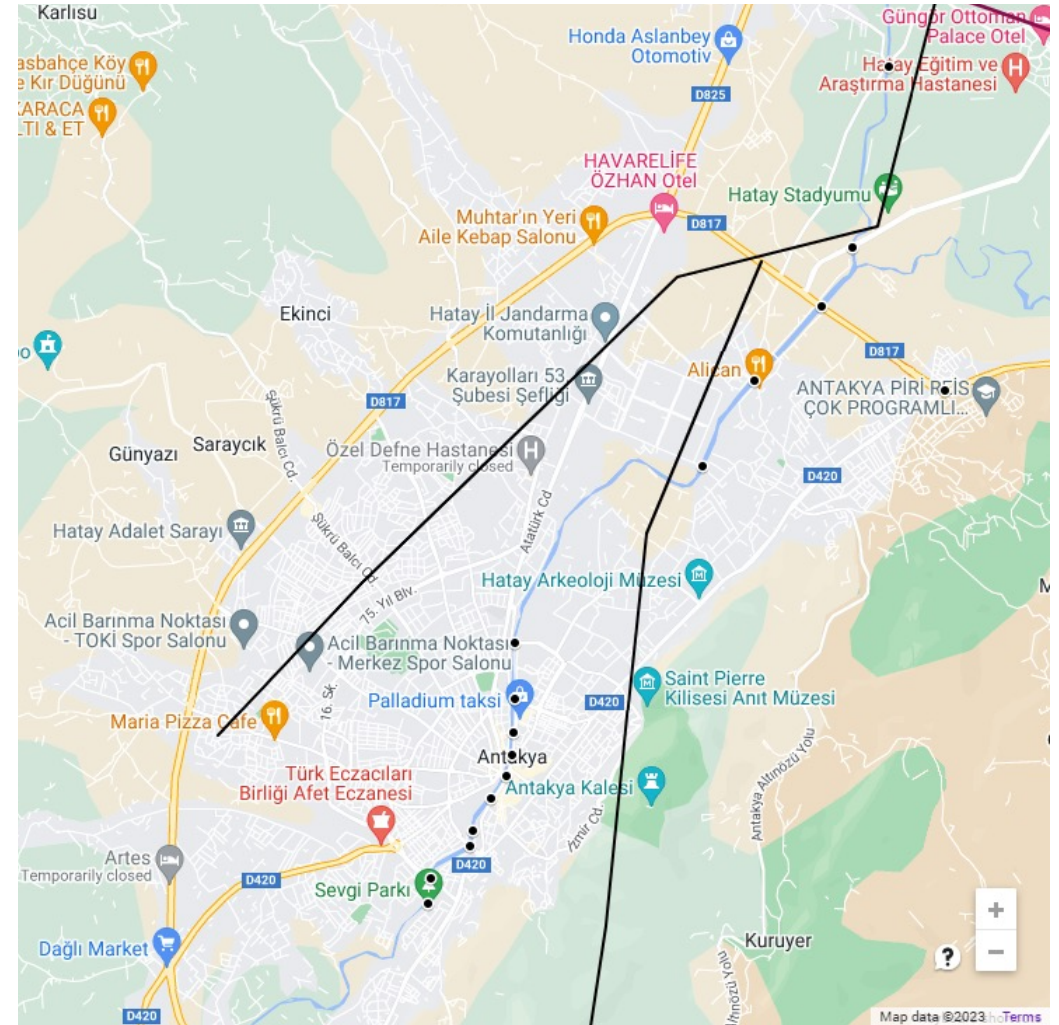
- 66 bridge sites
- 98 bridges
 - 1 bridge – 35 sites
 - 2 bridges – 30 sites
 - 3 bridges – 1 site

■ Damage

- 2 collapsed
- 8 severe
- 13 moderate
- 75 little/none



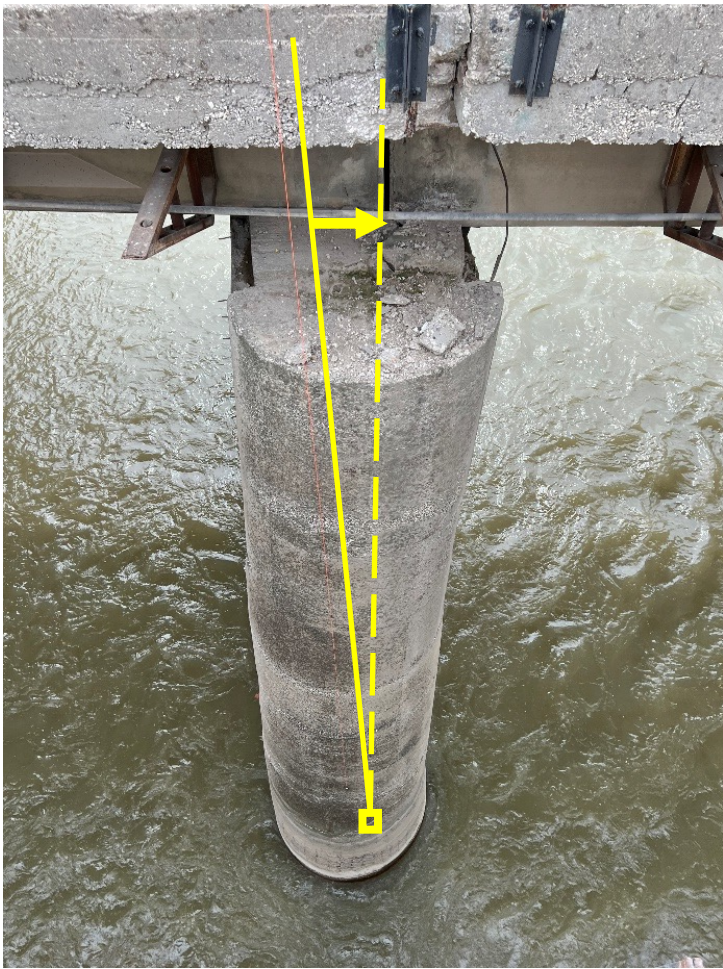
Transportation Infrastructure Performance - Bridges



Transportation Infrastructure Performance - Bridges

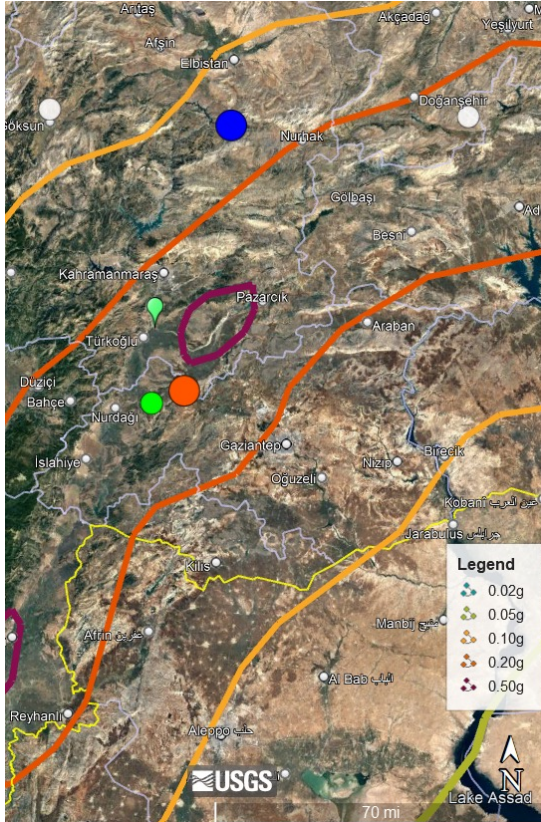


Transportation Infrastructure Performance - Bridges



Transportation Infrastructure Performance - Bridges

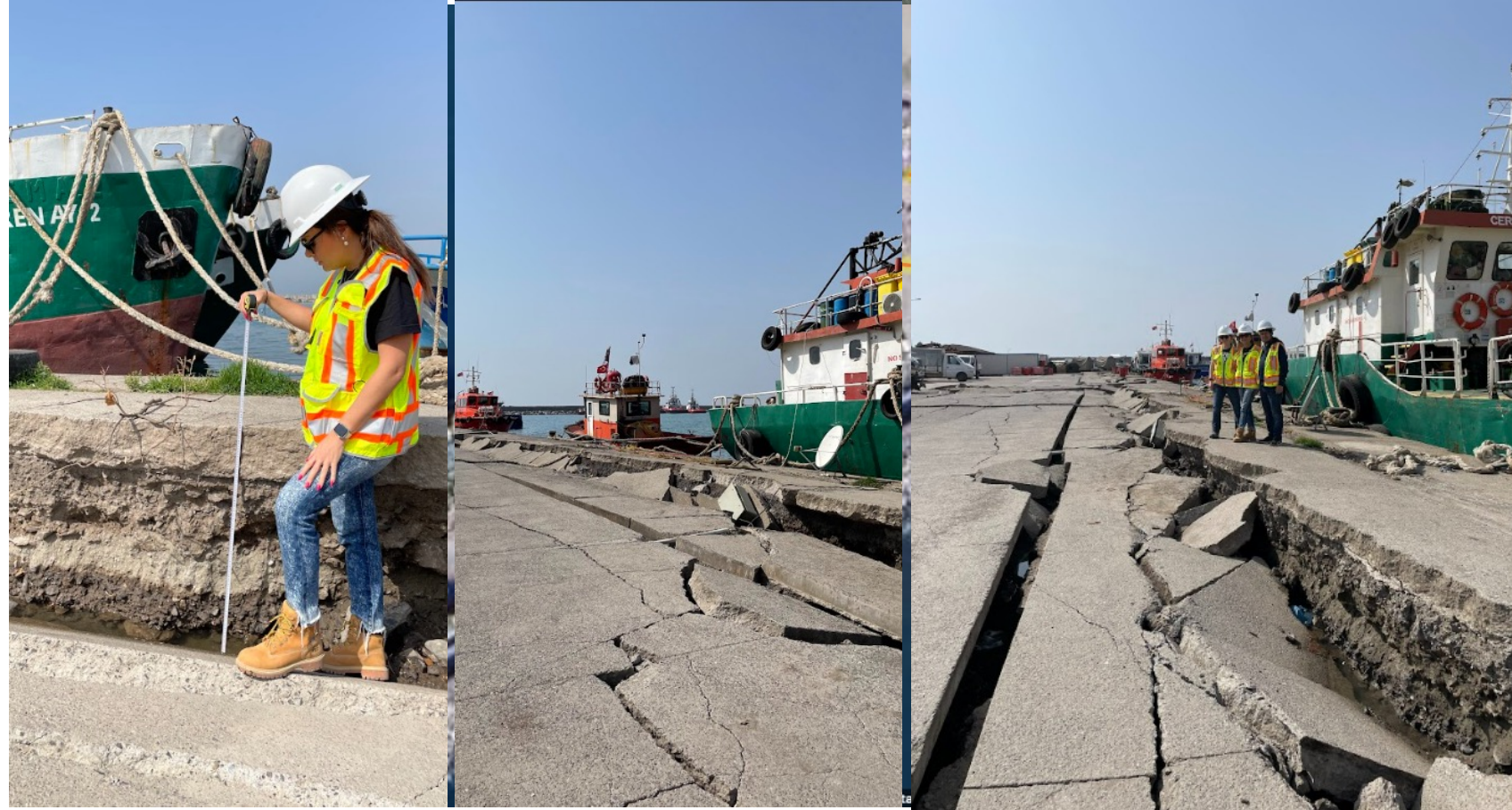
■ Türkoğlu, Kahramanmaraş



Total lateral displacement ~ 15 in (38 cm)
 The largest displacement ~ 6 in (15 cm)

Transportation Infrastructure Performance - Ports

- Dörtyol, Hakkari
 - Significant lateral spreading (~ 3 ft)
 - Seismically induced settlement (~2.3 ft).



Transport Infrastructure Performance - Airports

Transport Infrastructure Performance





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