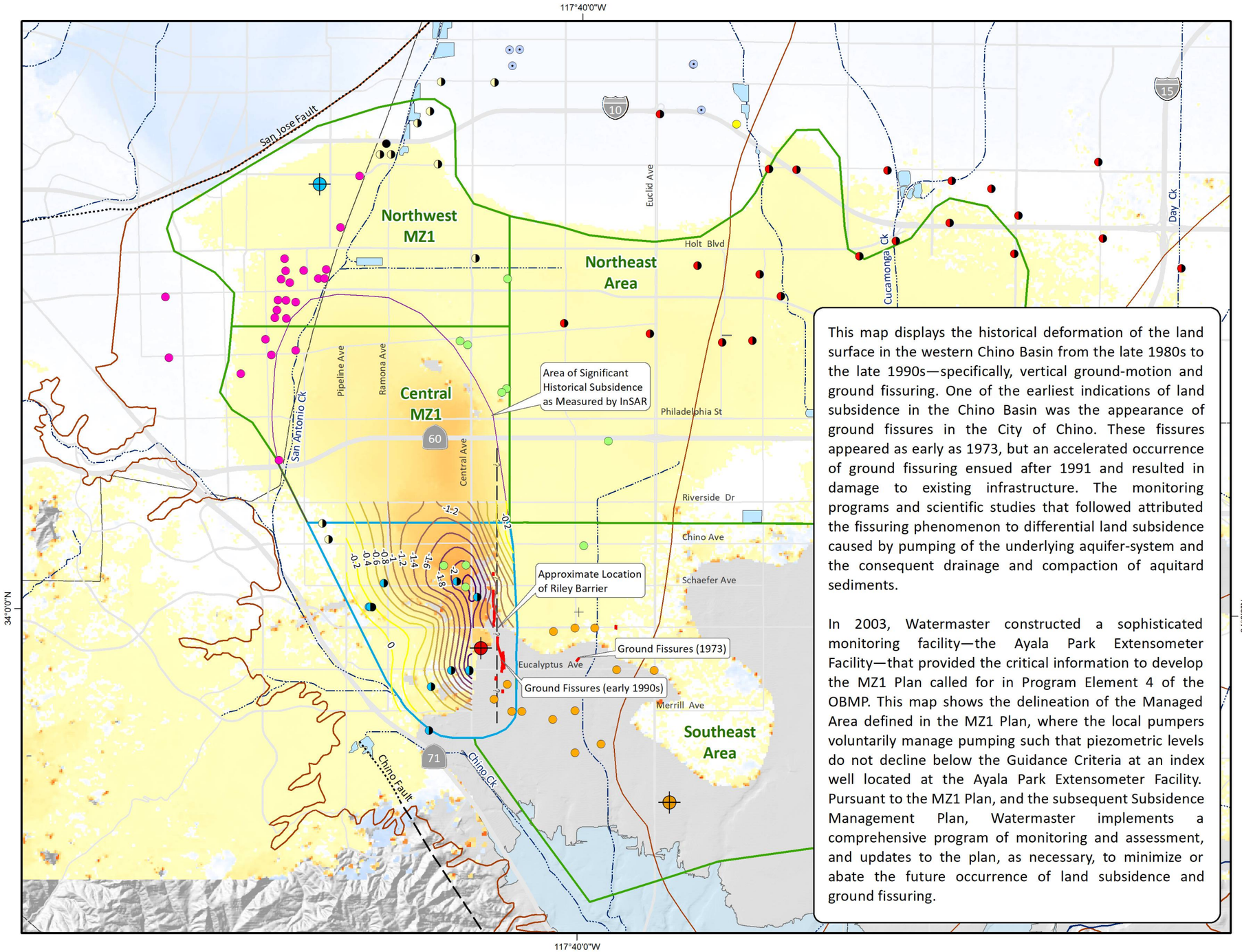

This map displays the historical deformation of the land surface in the western Chino Basin from the late 1980s to the late 1990s—specifically, vertical ground-motion and ground fissuring. One of the earliest indications of land subsidence in the Chino Basin was the appearance of ground fissures in the City of Chino. These fissures appeared as early as 1973, but an accelerated occurrence of ground fissuring ensued after 1991 and resulted in damage to existing infrastructure. The monitoring programs and scientific studies that followed attributed the fissuring phenomenon to differential land subsidence caused by pumping of the underlying aquifer-system and the consequent drainage and compaction of aquitard sediments.

In 2003, Watermaster constructed a sophisticated monitoring facility—the Ayala Park Extensometer Facility—that provided the critical information to develop the MZ1 Plan called for in Program Element 4 of the OBMP. This map shows the delineation of the Managed Area defined in the MZ1 Plan, where the local pumpers voluntarily manage pumping such that piezometric levels do not decline below the Guidance Criteria at an index well located at the Ayala Park Extensometer Facility. Pursuant to the MZ1 Plan, and the subsequent Subsidence Management Plan, Watermaster implements a comprehensive program of monitoring and assessment, and updates to the plan, as necessary, to minimize or abate the future occurrence of land subsidence and ground fissuring.

Contours of Relative Change in Land Surface Altitude as Estimated by Leveling Surveys 1987 to 1999

0.0 ft

-2.2 ft

Relative Change in Land Surface Altitude as Measured by InSAR October 1993 to December 1995

+ 1 ft

0

- 1 ft

InSAR absent or incoherent

Ayala Park Extensometer Facility

Chino Creek Extensometer Facility

Pomona Extensometer Facility

OBMP MZs

Managed Area

Areas of Subsidence Concern

Active Production Wells by Owner - 1987 to 1999

- City of Upland
- City of Chino
- City of Chino Hills
- City of Ontario
- City of Pomona
- California institution for men
- Golden state Water Company
- Monte Vista Water District
- San Antonio Water Company

Other key map features are described in the Exhibit 1-1 legend.

Prepared by:

WEST YOST Water. Engineered.

Author: AP

Date: 6/23/2021

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0 1.5 3 Miles

0 2 4 Km

Prepared for:

Chino Basin Watermaster
2020 State of the Basin Report
Ground-Level Monitoring

Historical Land Surface Deformation in Management Zone 1

Leveling Surveys (1987-1999) and InSAR (1993-1995)

Exhibit 6-1