Santa Ana Riverwalk Atlas

August 2019

Credit: Brittany App Photography

An atlas-based summary of Santa Ana River habitat surveys conducted annually from 2006-2018.

SAWPA

Santa Ana Sucker Fish Conservation Team

Santa Ana Riverwalk Atlas

Provided by the Santa Ana Sucker Conservation Team

A task force administered by the

Santa Ana Watershed Project Authority

Santa Ana Sucker Fish Conservation Team

Supporting Agencies

Thanks to the members of the Santa Ana Sucker Conservation Team:

Thanks to our Riverwalk Partners in planning the survey:

And thanks to all the volunteers who joined us on October 18, 2018 for the latest Riverwalk survey.

Santa Ana Sucker Fish Conservation Team

About the Riverwalk

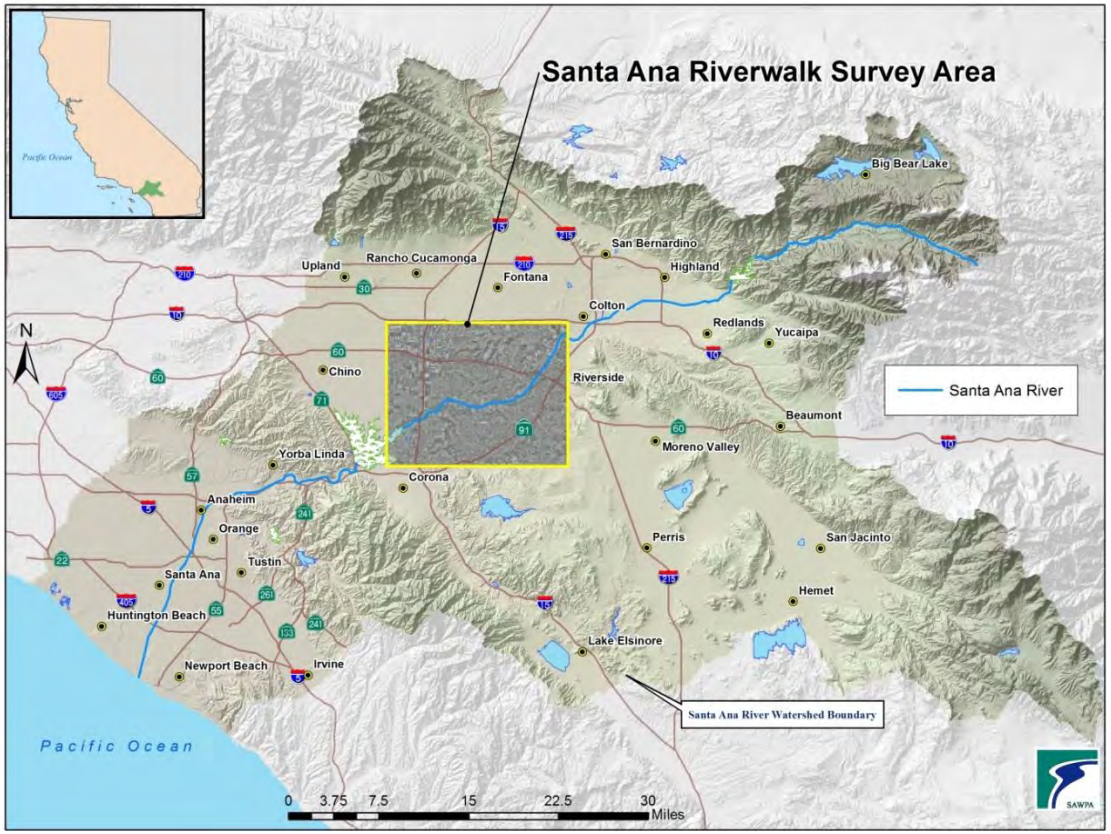
- The Santa Ana River Watershed includes a mixture of urban, suburban and rural areas that border the Pacific Ocean, small creeks and the region's central waterway, the Santa Ana River.
- The water agencies and municipalities that provide water to these areas have partnered with regulatory agencies, conservation organizations and other entities to conduct an annual fish habitat survey within the Santa Ana River with a focus on one of the region's federally listed threatened endemic aquatic species, the Santa Ana sucker, *Catostomus santaanae*.
- The **Santa Ana Sucker Conservation Team**, a partnership of agencies and municipalities, organizes the Riverwalk each year.

Credit: Brett Mills

Santa Ana Sucker

Santa Ana Sucker Fish Conservation Team

Location of the Riverwalk



The Riverwalk is an aquatic habitat survey and takes place on an 18 mile stretch of the Santa Ana River in California. The river is located in the Santa Ana River Watershed which covers an area from the Orange County oceanfront to the San Bernardino Mountains.

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About the Santa Ana Sucker

The Santa Ana sucker is primarily a bottom feeder.

A river bottom with a mixture of sand, cobble and gravel is ideal for the algae that the fish feeds on.

Spawning can also take place over cobble and gravel riffles.

Credit: Brett Mills

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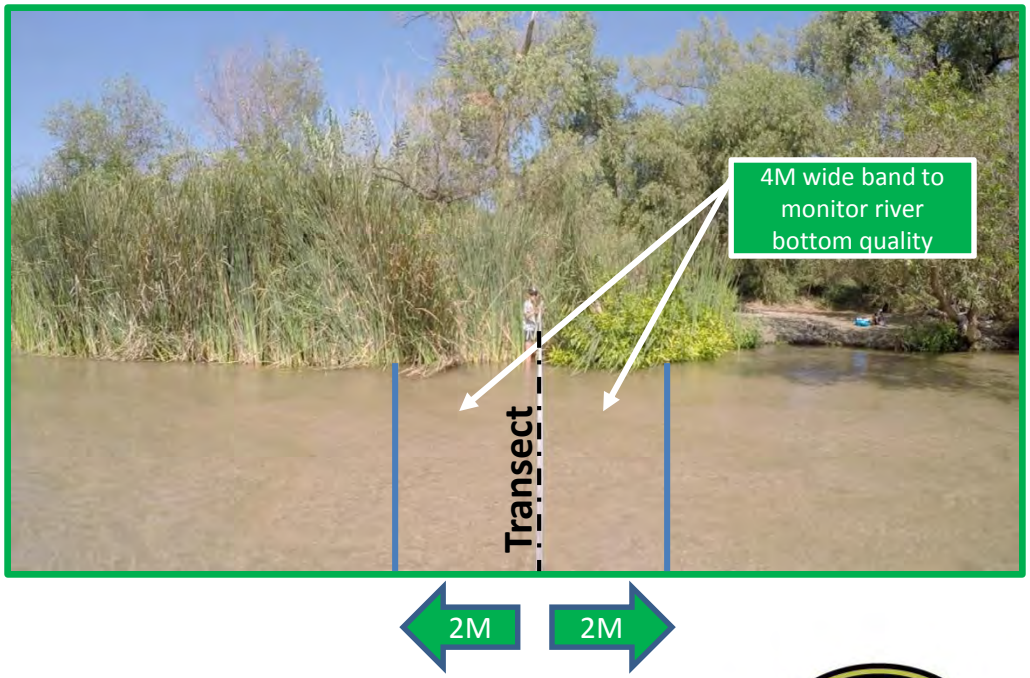
Collecting Riverwalk Data in the Field

- Each year, approximately 50 volunteers collect data at 110 field points in the River which they locate with a GPS unit.
- At each field point a transect line is drawn from bank to bank. To identify the area to monitor, a 4-meter-wide band is centered at the transect.
- The area within the band is then surveyed by visually identifying what type of material makes up the river bottom:
  - Mud/Silt
  - Sand
  - Gravel
  - Cobble
  - Boulder



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How to Read the Riverwalk Atlas

The110 transects surveyed each year are labeled with a designating number (9 through 118).

For information sharing purposes, the quality of the river bottom (substrate) is generalized in this Atlas in the following categories:

- Poor: 30% or less of the transects substrate is gravel/cobble.
- Marginal: 31% to 65% of the transects substrate is gravel/cobble.
- Excellent: More than 65% of the transects substrate is gravel/cobble.

Note: The majority of the data is collected by trained volunteers. Each volunteer is trained in collecting Riverwalk data during the morning of the event. The ranking described above is for general information purposes and the results do not denote an explicit assessment of all substrate conditions of this 18 mile stretch of the Santa Ana River.

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Riverwalk Maps

An atlas-based summary for Riverwalk substrate surveys from 2006-2018

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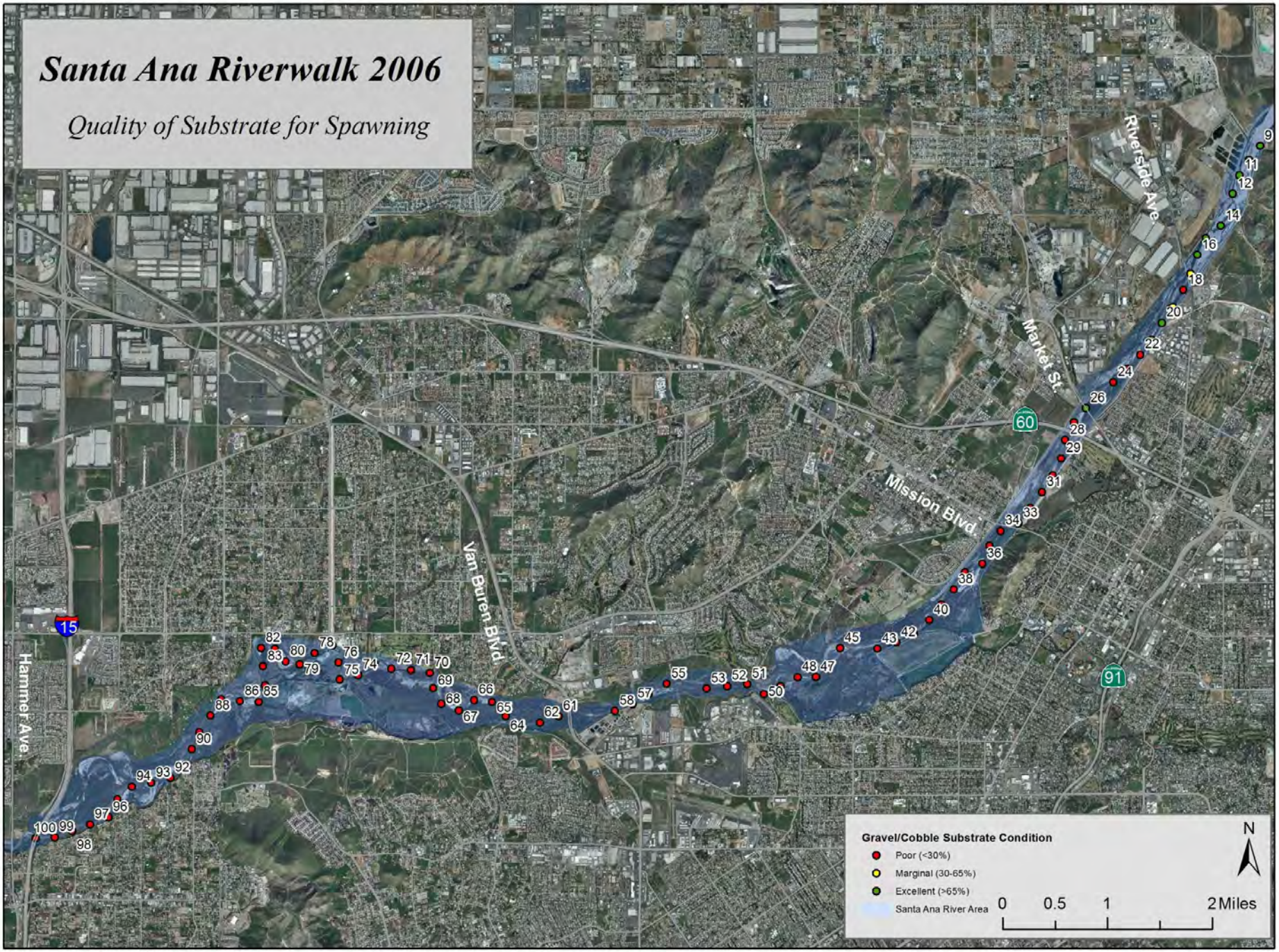

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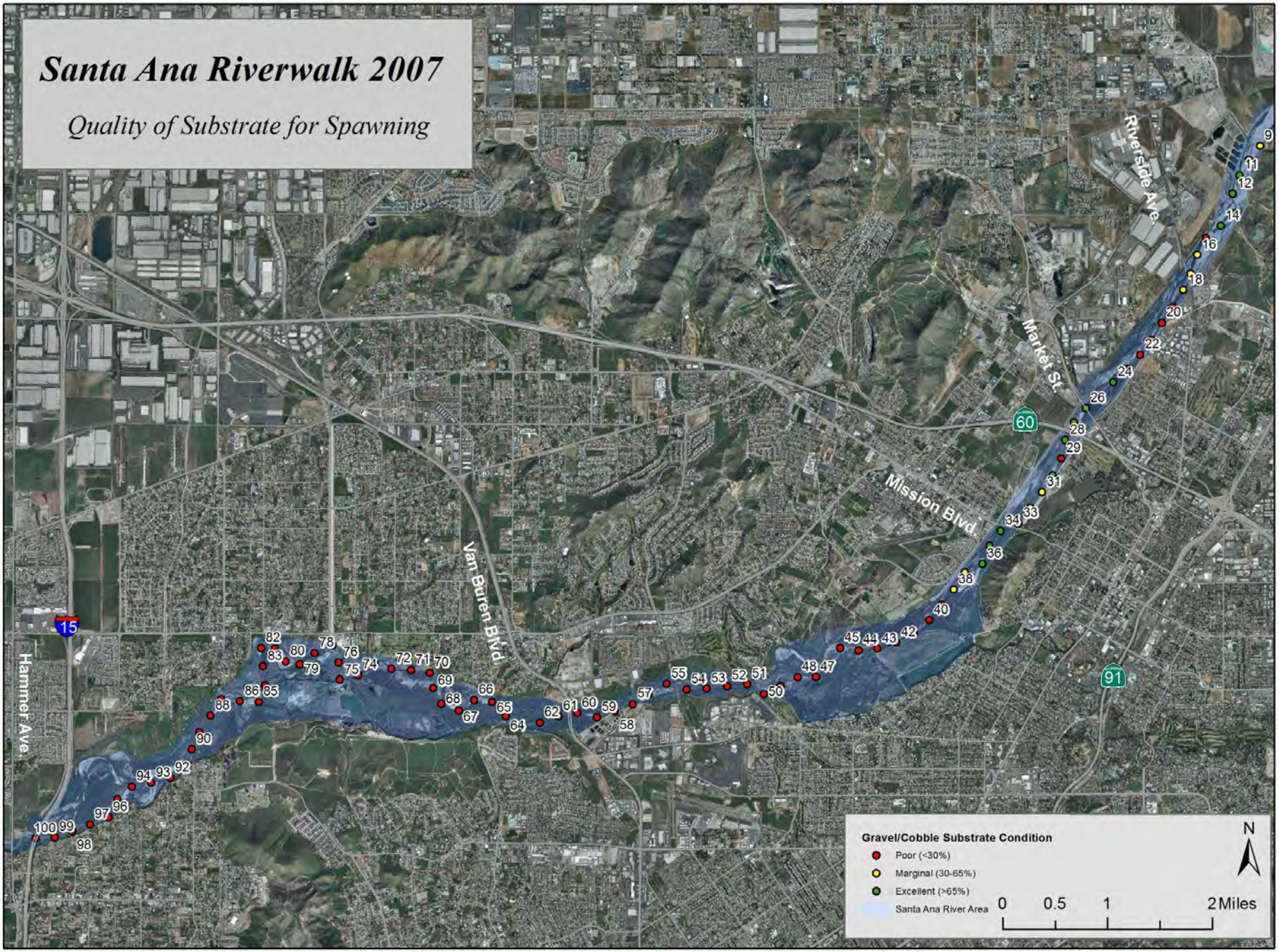

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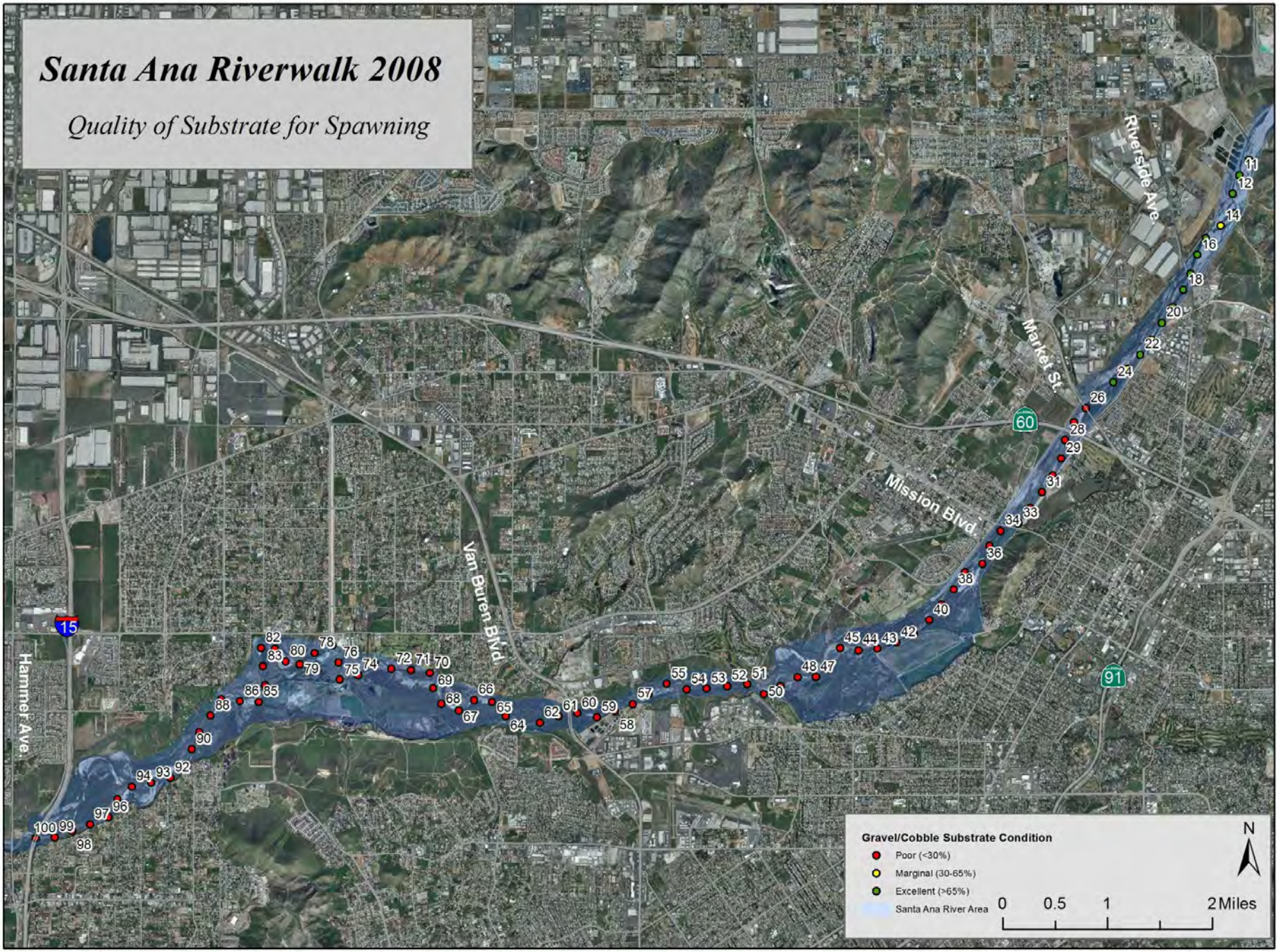

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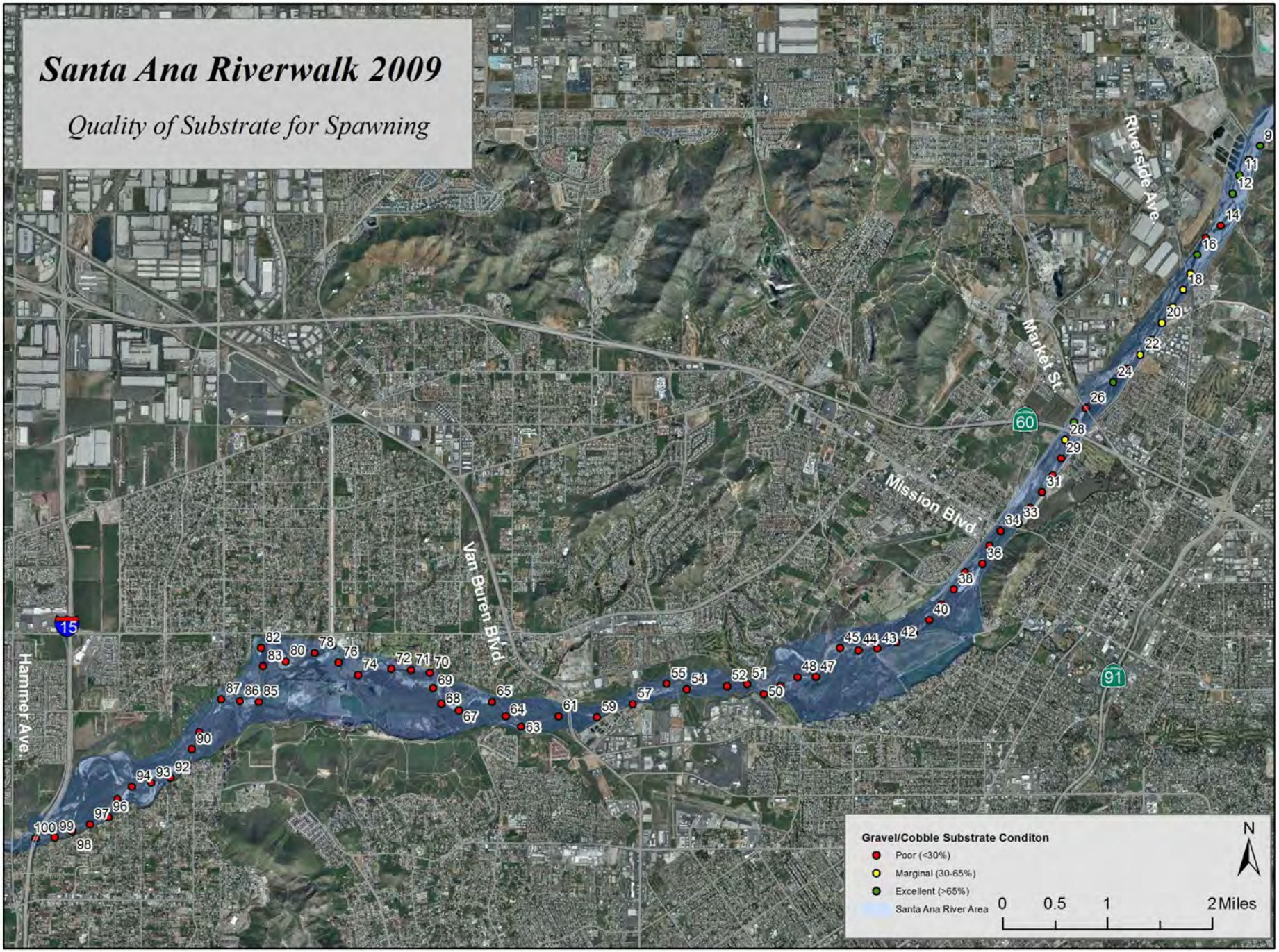

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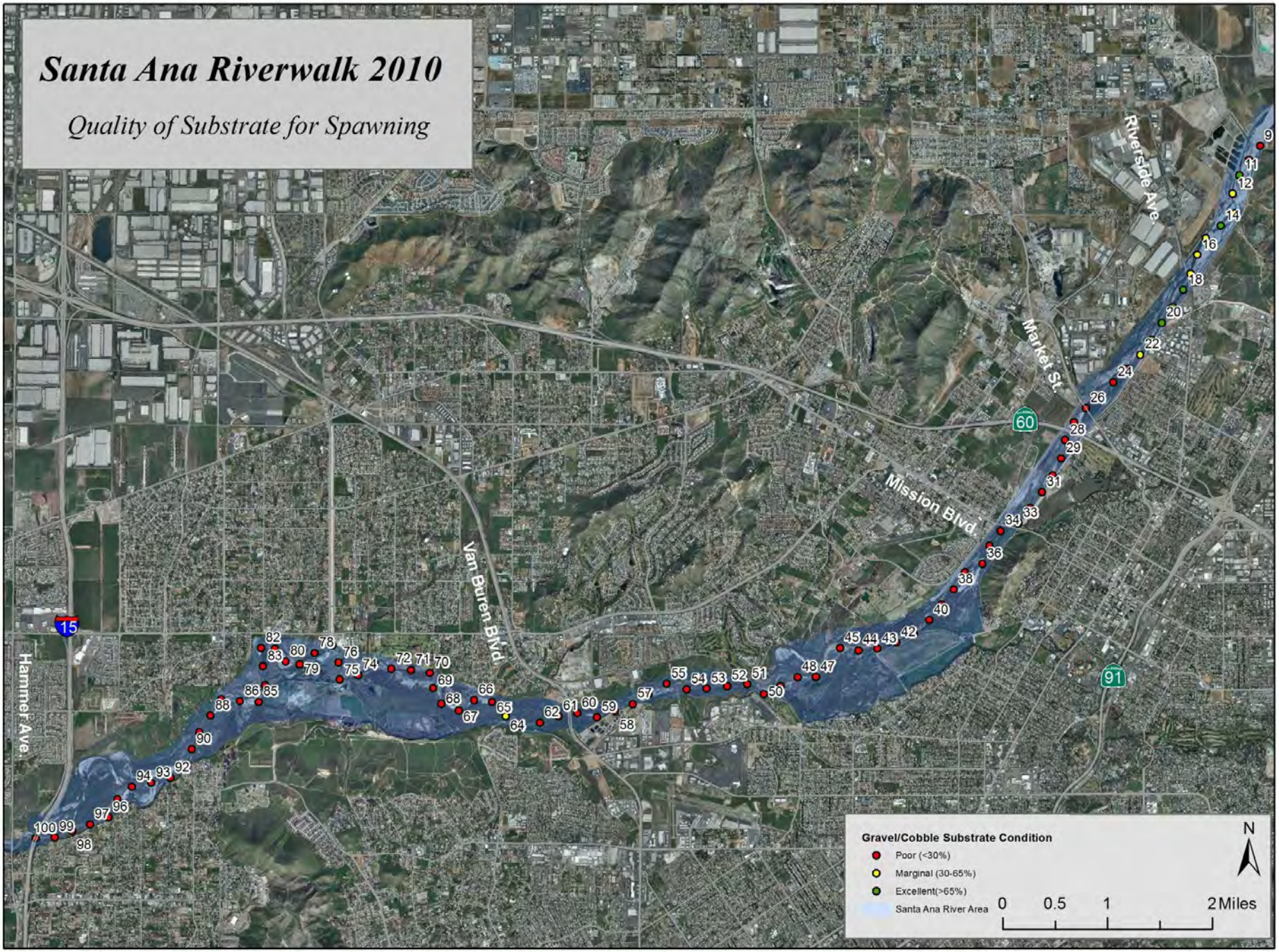

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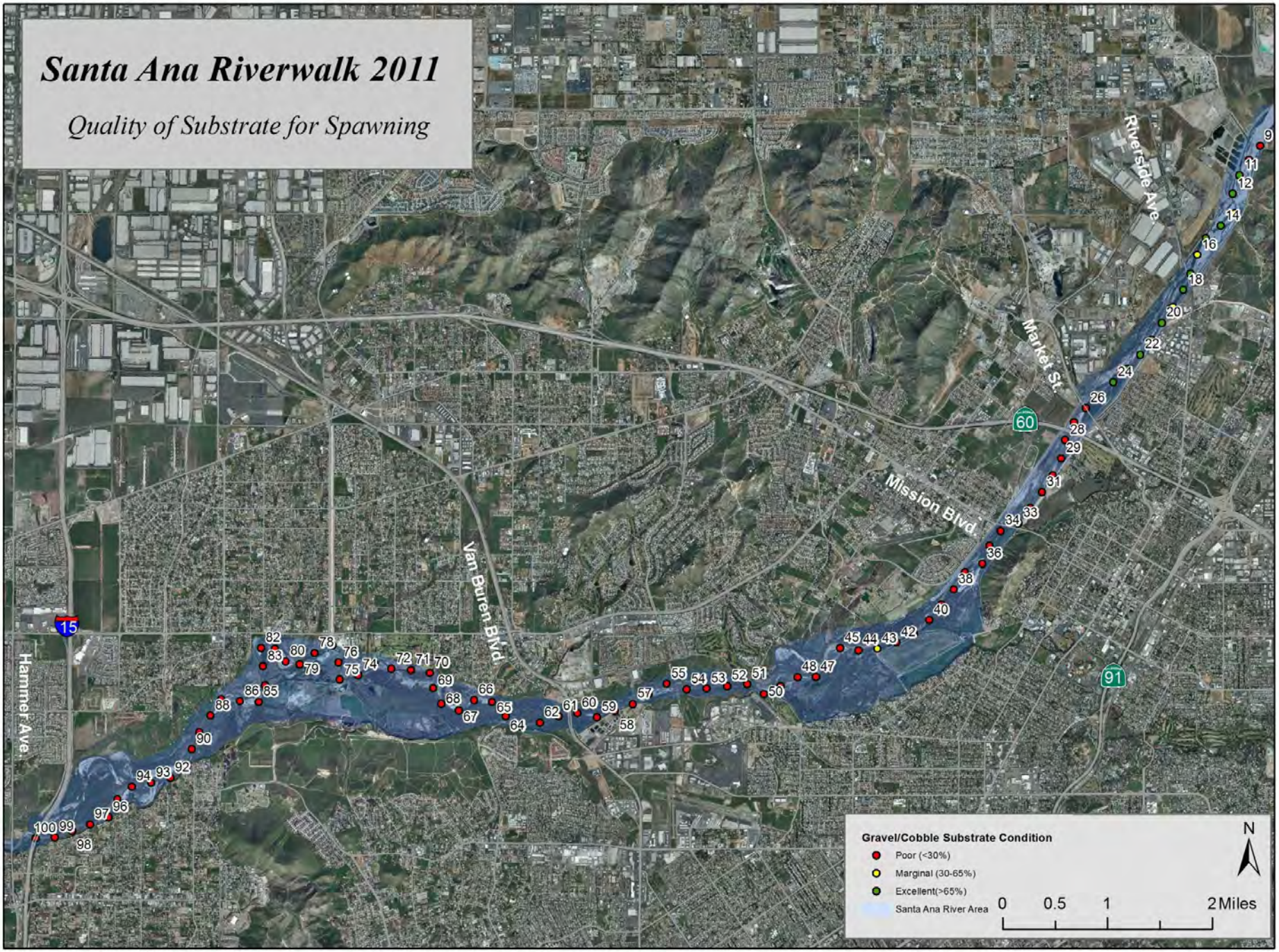

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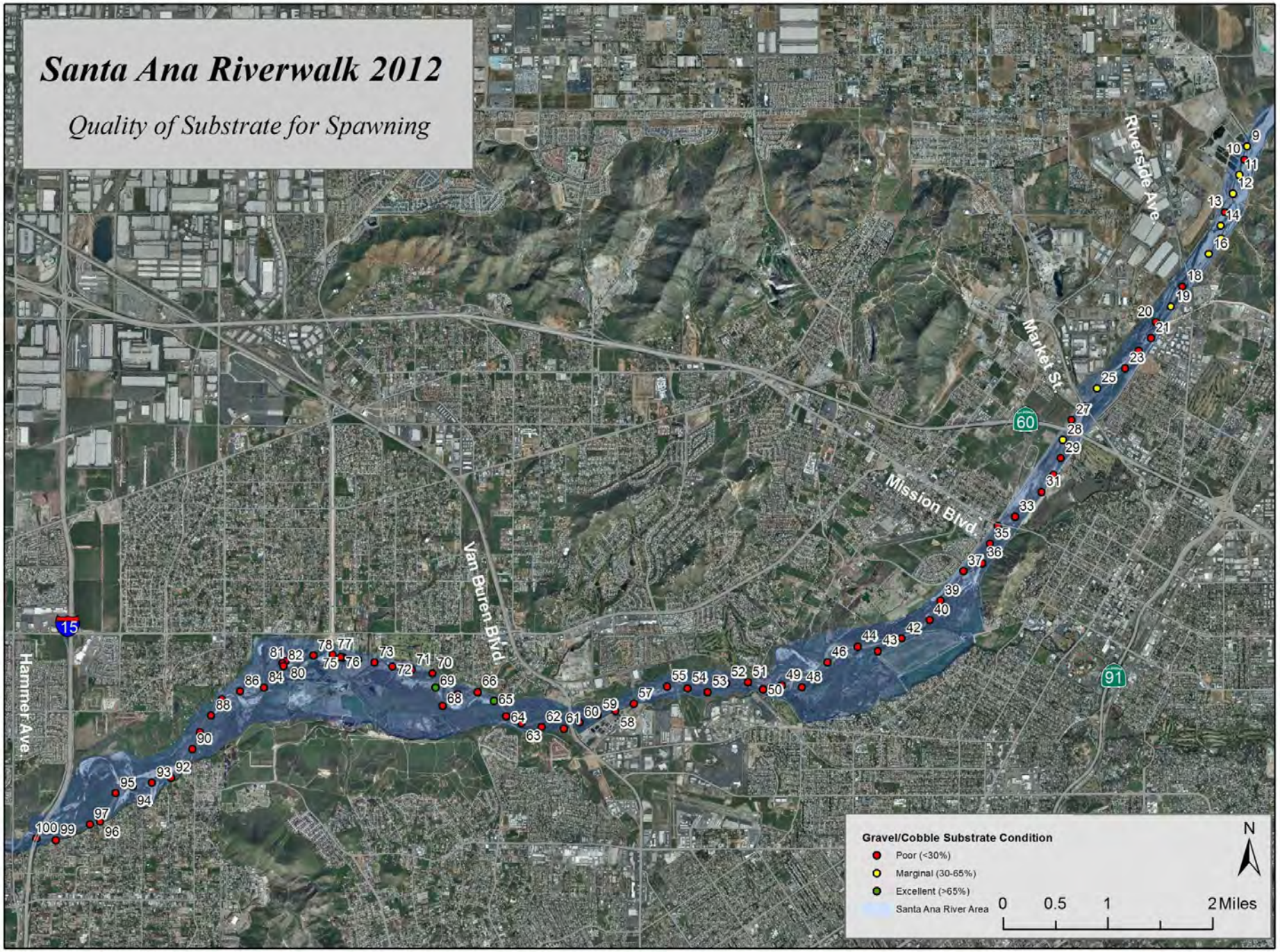

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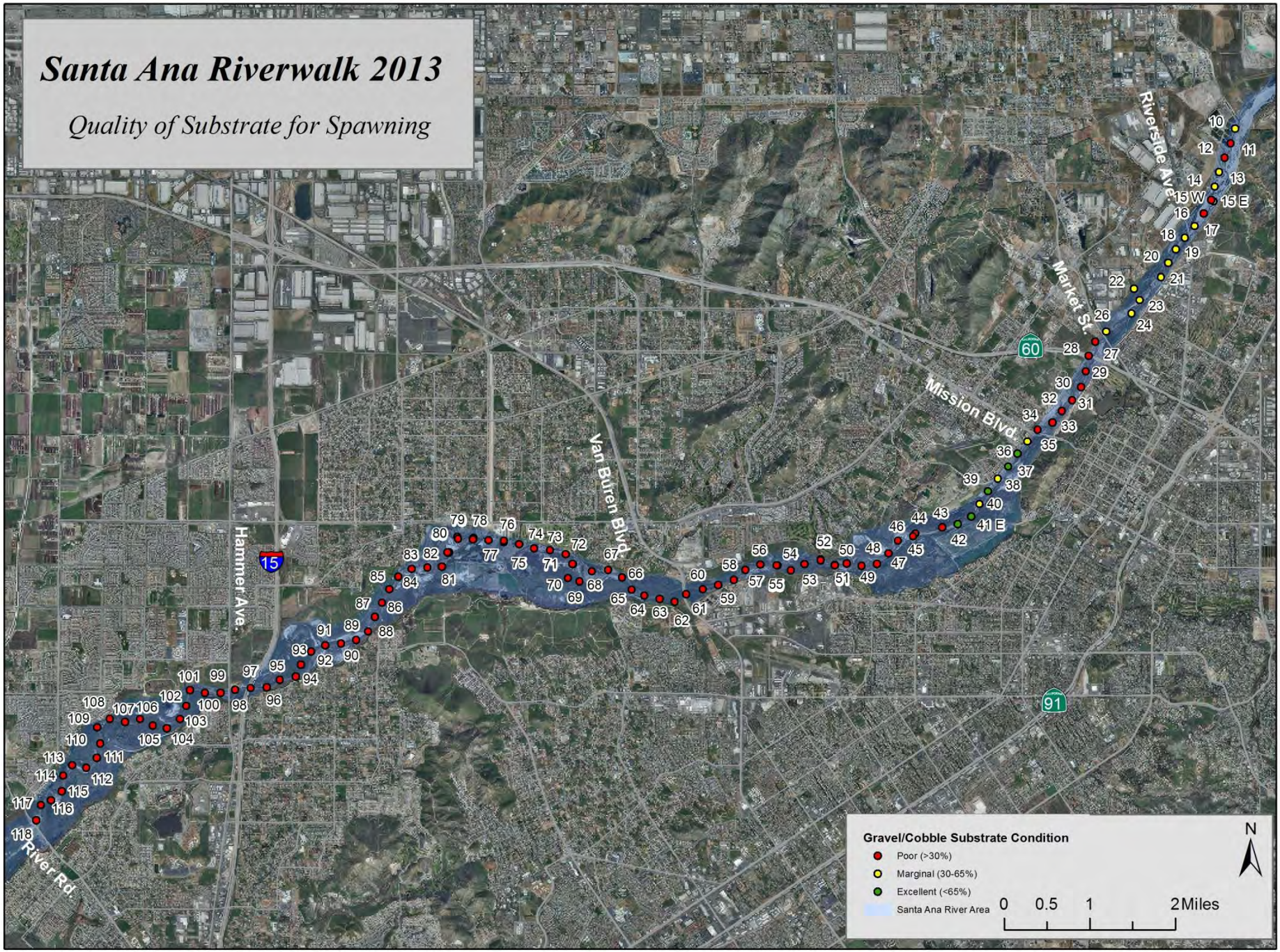

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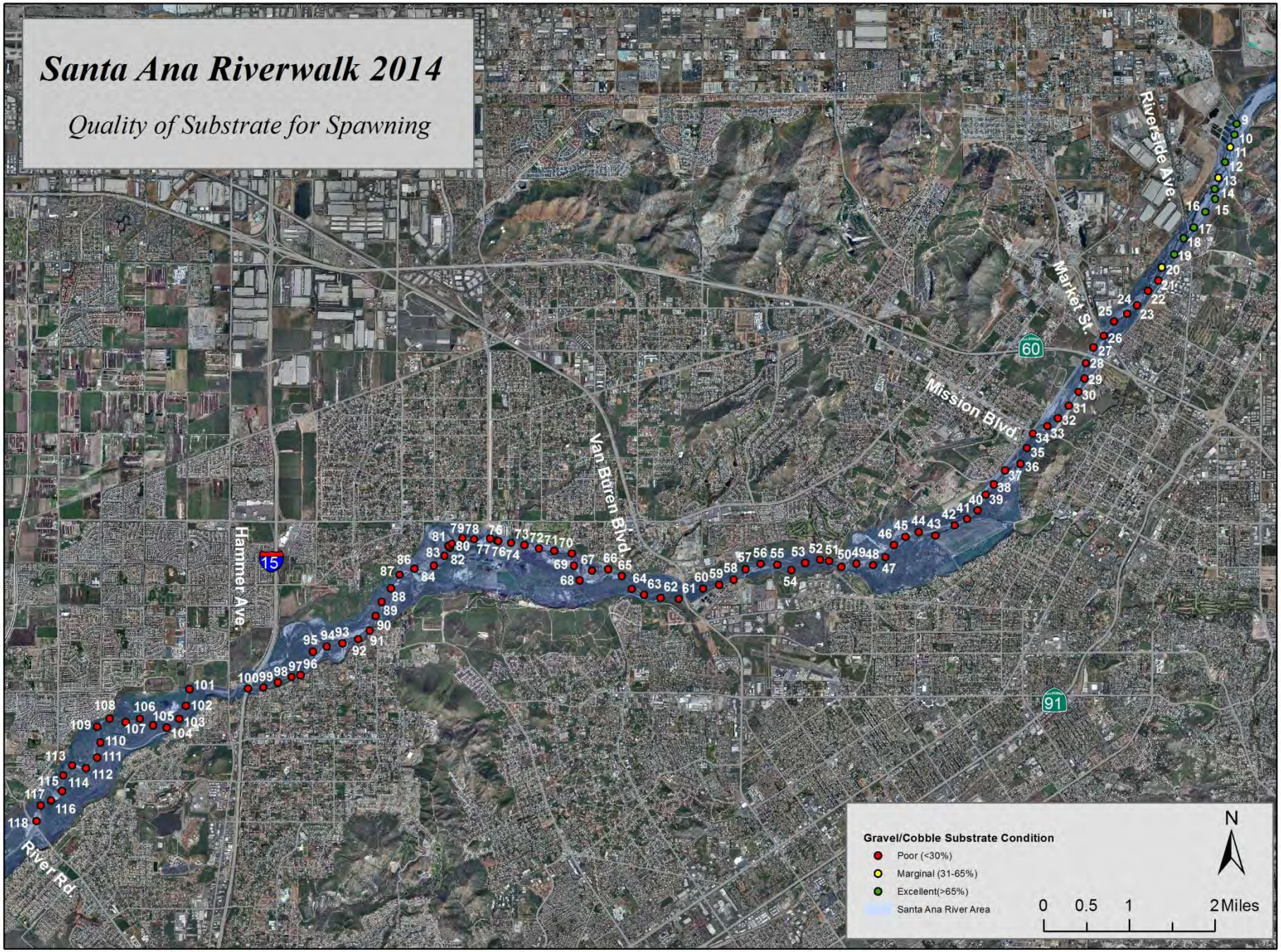
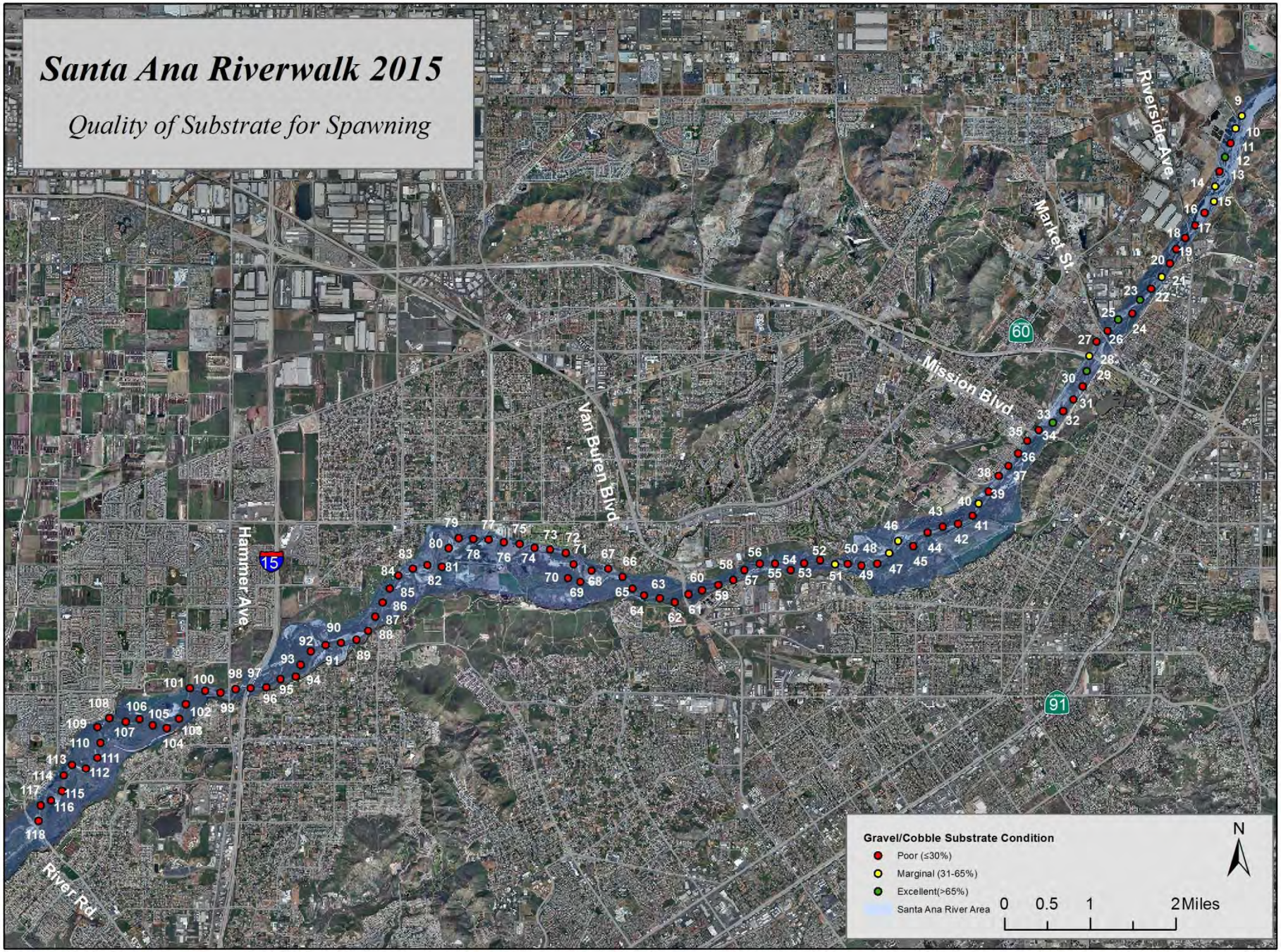

Santa Ana Riverwalk 2014
Quality of Substrate for Spawning
Riverside Ave.
Market St.
Mission Blvd.
Van Buren Blvd.
Hammer Ave.
River Rd.
15
60
91
Gravel/Cobble Substrate Condition
Poor (<30%)
Marginal (31-65%)
Excellent(>65%)
Santa Ana River Area
N
0 0.5 1 2 Miles



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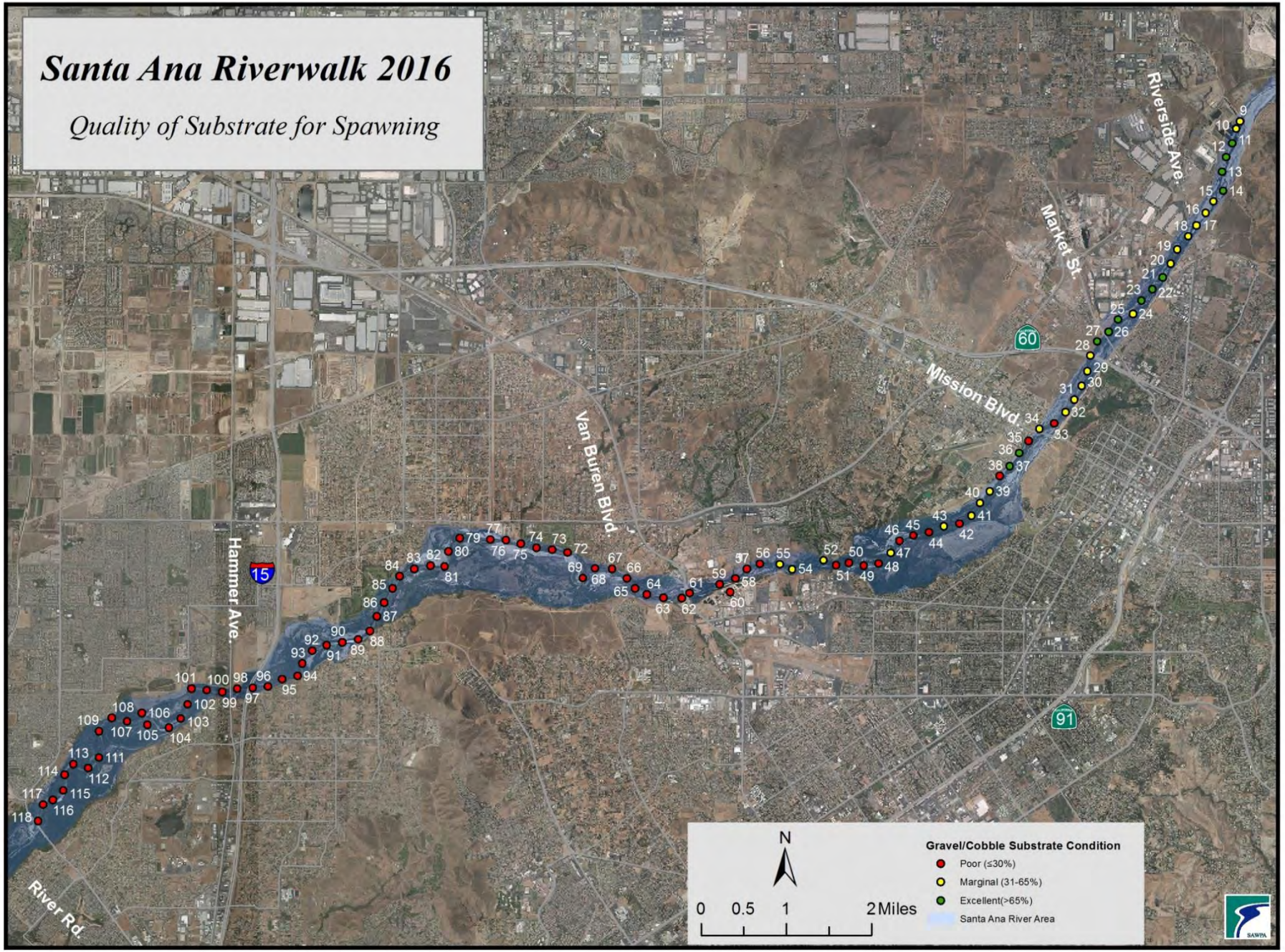

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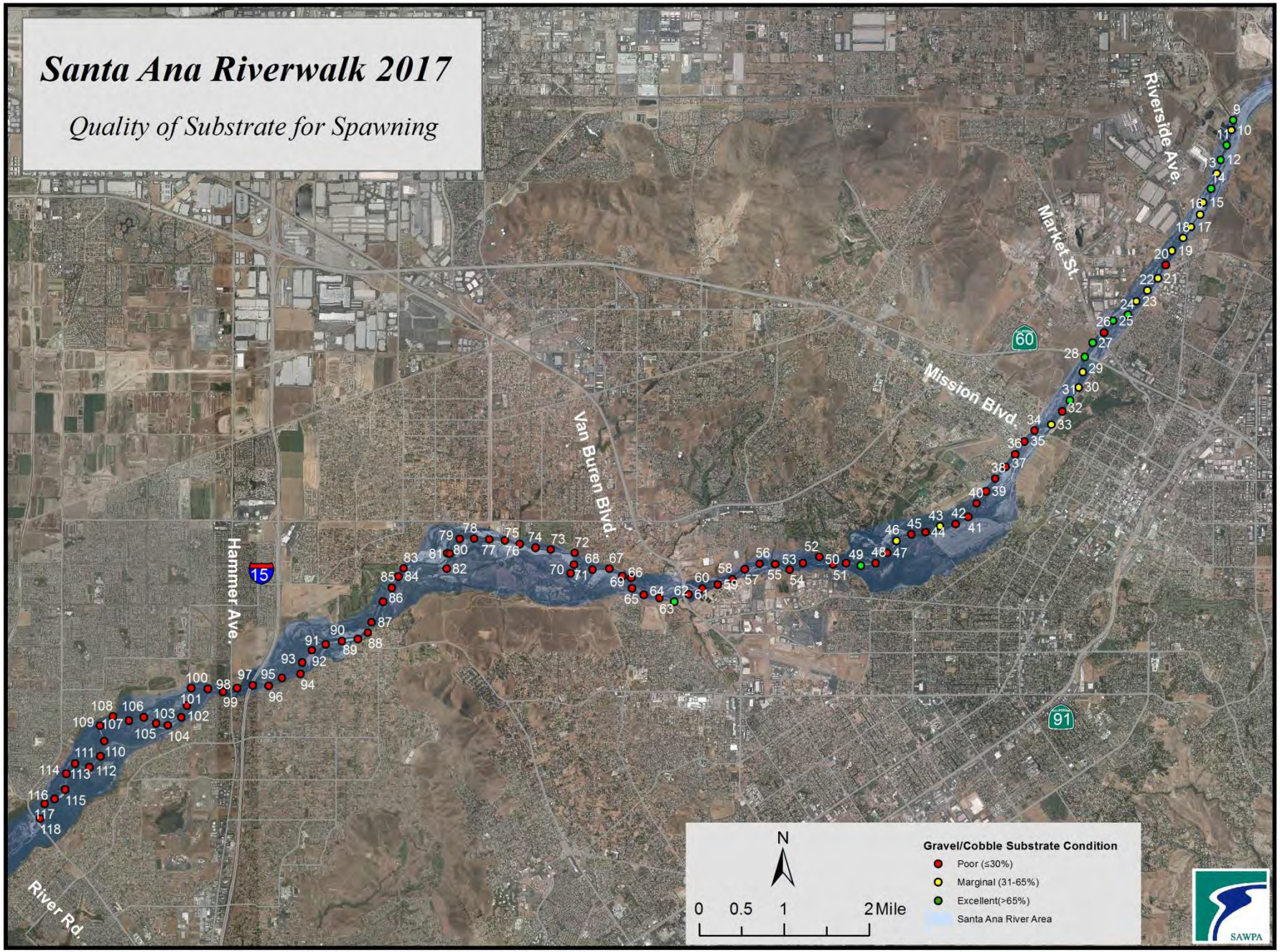

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Observations and Next Steps

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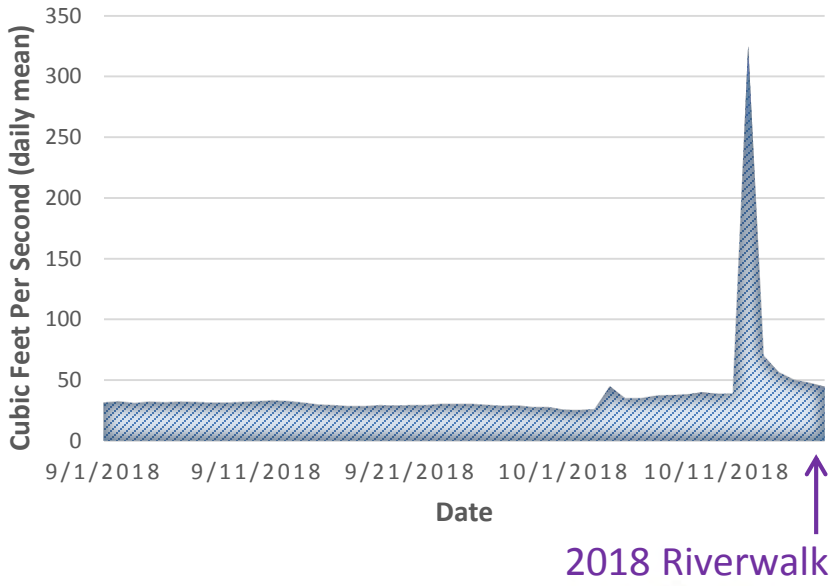
2018 Riverwalk Occurred After Storm Event

For context, the most recent Riverwalk occurred after a storm where flows increased to a daily mean of 325 cubic feet per second at the USGS MWD Crossing gaging station which is located within the Riverwalk survey area.

Flows may affect survey results by moving sediment through the river system which can deposit on the substrate or remain in the water column.

Figure 1: Fall Streamflow at USGS MWD Crossing Gaging Station



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Ideas for Further Analysis of Riverwalk Data

- Although there are many important considerations affecting habitat such as timing and duration of flows, high flows have the potential to import sand and silt into the River system, which could cover portions of the existing substrate composition.
- To truly correlate sucker habitat and flows, further analysis will be needed that compares sucker habitat conditions to volume, timing, duration, magnitude and variability of flows in the River.

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Next Steps for Sucker Team

- Using data from the Riverwalk, the Team designed and constructed a habitat project in 2018 within the Riverwalk area at Van Buren Boulevard Bridge.
- The Team, and agencies such as San Bernardino Valley Municipal Water District, continue to use the data to plan future fish habitat improvements in the area.
- Conduct 2019 Riverwalk.

Habitat Structure at Van Buren Boulevard (October 2018)

Santa Ana Sucker Fish Conservation Team

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A task force administered by the

Santa Ana Watershed Project Authority

https://sawpa.org/task-forces/santa-ana-sucker-conservation-team/

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