

Phoenix Cool Corridors Research Update

Urban Heat Island & Tree Shade Subcommittee Meeting
February 9, 2021

Climate Action Plan Framework

“Create a network of cool corridors in vulnerable communities to facilitate movement from residents’ homes to their places of employment, education and play.”

Research Plan (Phoenix + ASU + Partners)

Cool Corridor Concept Definition

Determine key features of cool corridors (environmental, social, infrastructure, etc.)

Acquire relevant data sets; implement selection algorithm

Identify existing best practices and examples in Phoenix

Propose examples to community, receive feedback

Cool Corridor Prioritization

Determine key characteristics of neighborhoods to be prioritized for cool corridors

Acquire relevant data sets; implement prioritization algorithm

Propose prioritized set of neighborhoods; receive feedback

Continuous learning and iteration to guide spatial analysis with community perspectives

Suitability Assessment

Assess opportunities and conflicts on the streetscape

Develop strategies for “cooling” corridors

Propose implementation projects; receive feedback

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Cool Corridor Concept Definition - version 0.1

Cool corridors are approximately mile-long stretches of continuous road that...

1. Are cool
2. Offer shade to pedestrians

Cool Corridor Concepts & Data sets

Cool corridors...

1. Are cool

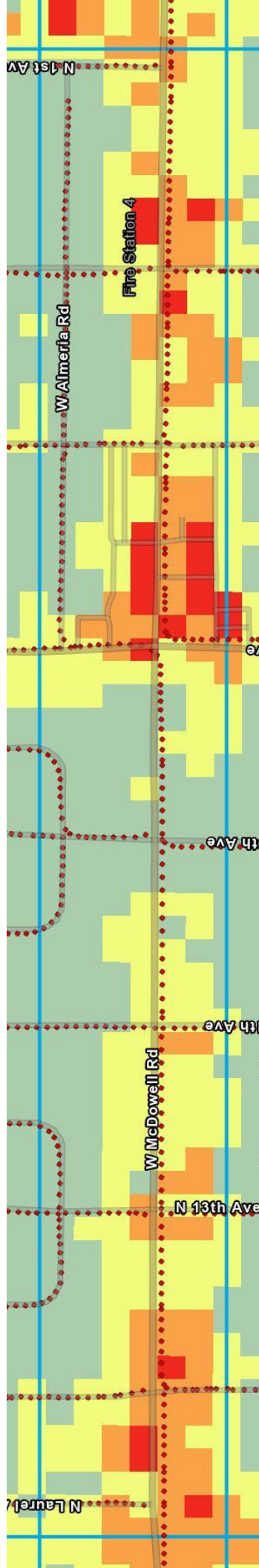
Satellite-derived land surface temperature

2. Offer shade to pedestrians

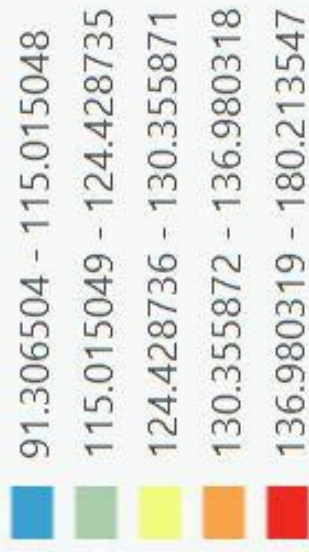
Sky view factor from Google Street View images

Cool Corridor Data Demonstration

Land surface temperature map

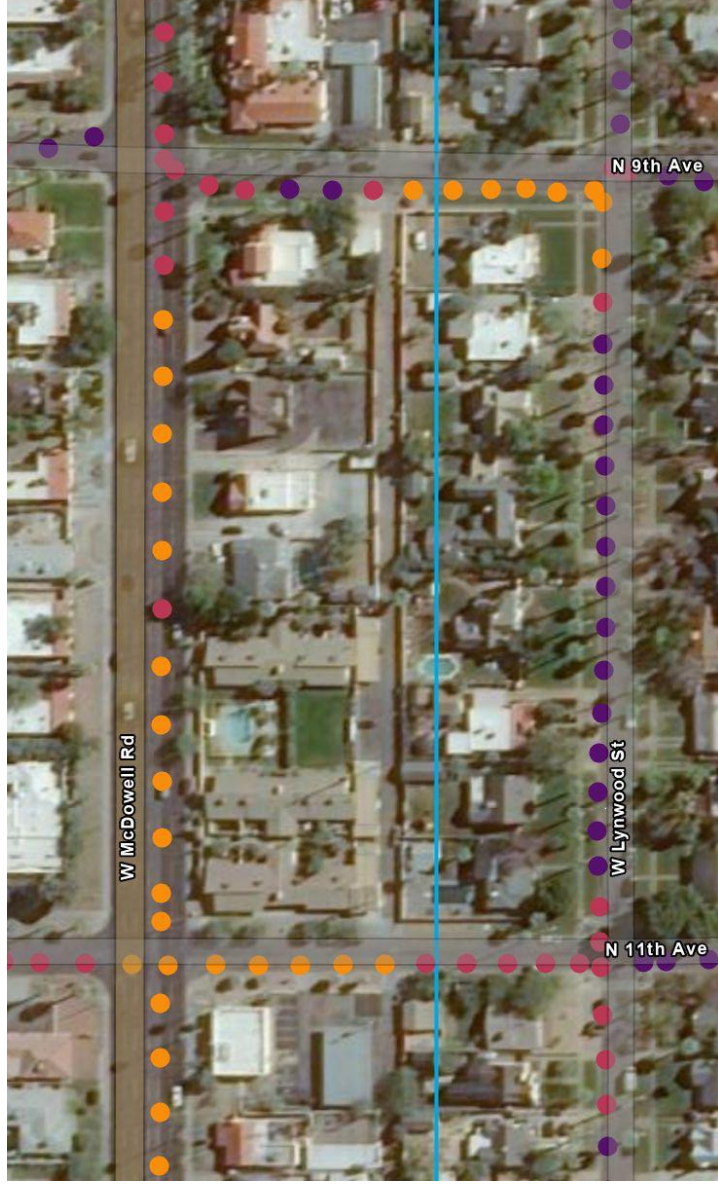


Value



Cool Corridor Data Demonstration

Sky view factor map

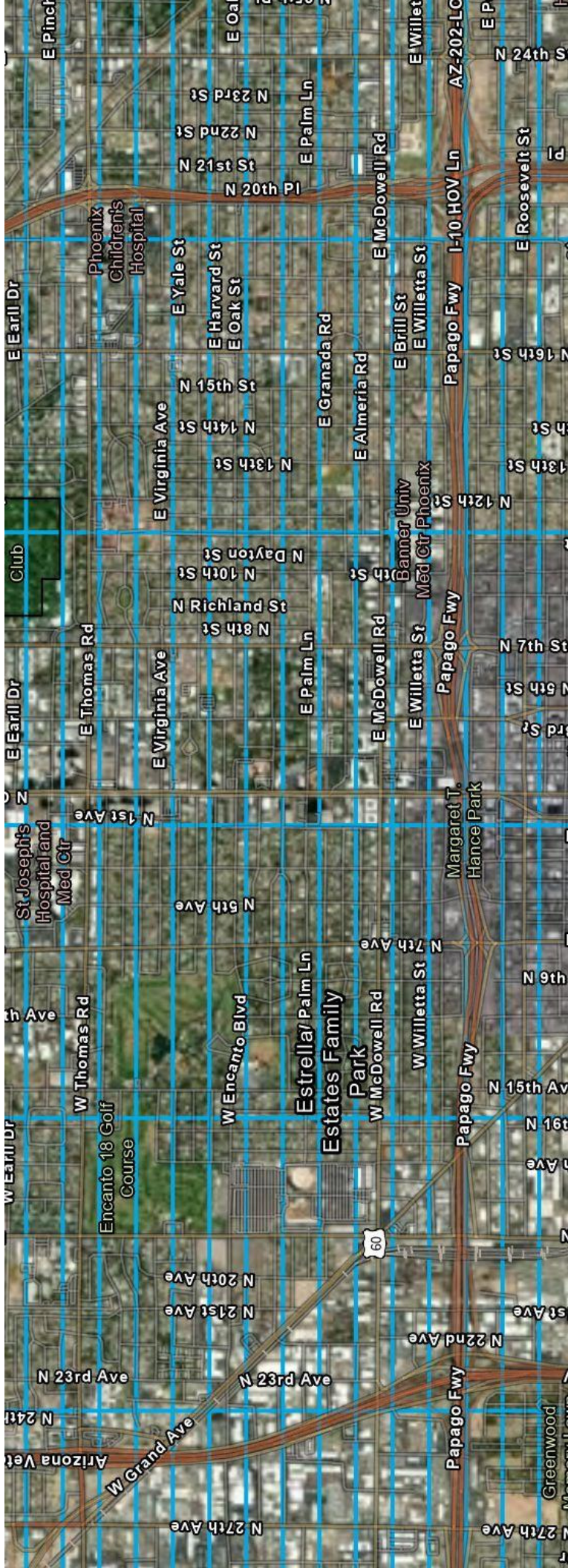


SVF

- 0.023418 - 0.310068
- 0.310069 - 0.865027
- 0.865028 - 0.958346
- 0.958347 - 0.991738
- 0.991739 - 0.999889

Cool Corridor Data Demonstration

Phoenix in “blocks”



Cool Corridor Identification

Rank blocks based on the combination of

1. Low average land surface temperature in the entire block
2. Low sky view factor on the roads in the block

*Require a minimum number of points on the road network in each block

*Calculate separately for N-S and E-W blocks

Cool Corridor Candidates

Your feedback invited!

1. Does this example match the current concept of a cool corridor (cool + shade for pedestrians)? Why or why not?
2. Looking at this example, how do we need to update the concept for a cool corridor?

*Not important for now - “does this cool corridor serve a vulnerable neighborhood?”

*Single photos not as useful as Google Street View “tour”

1640 N 11th Ave
Phoenix, Arizona

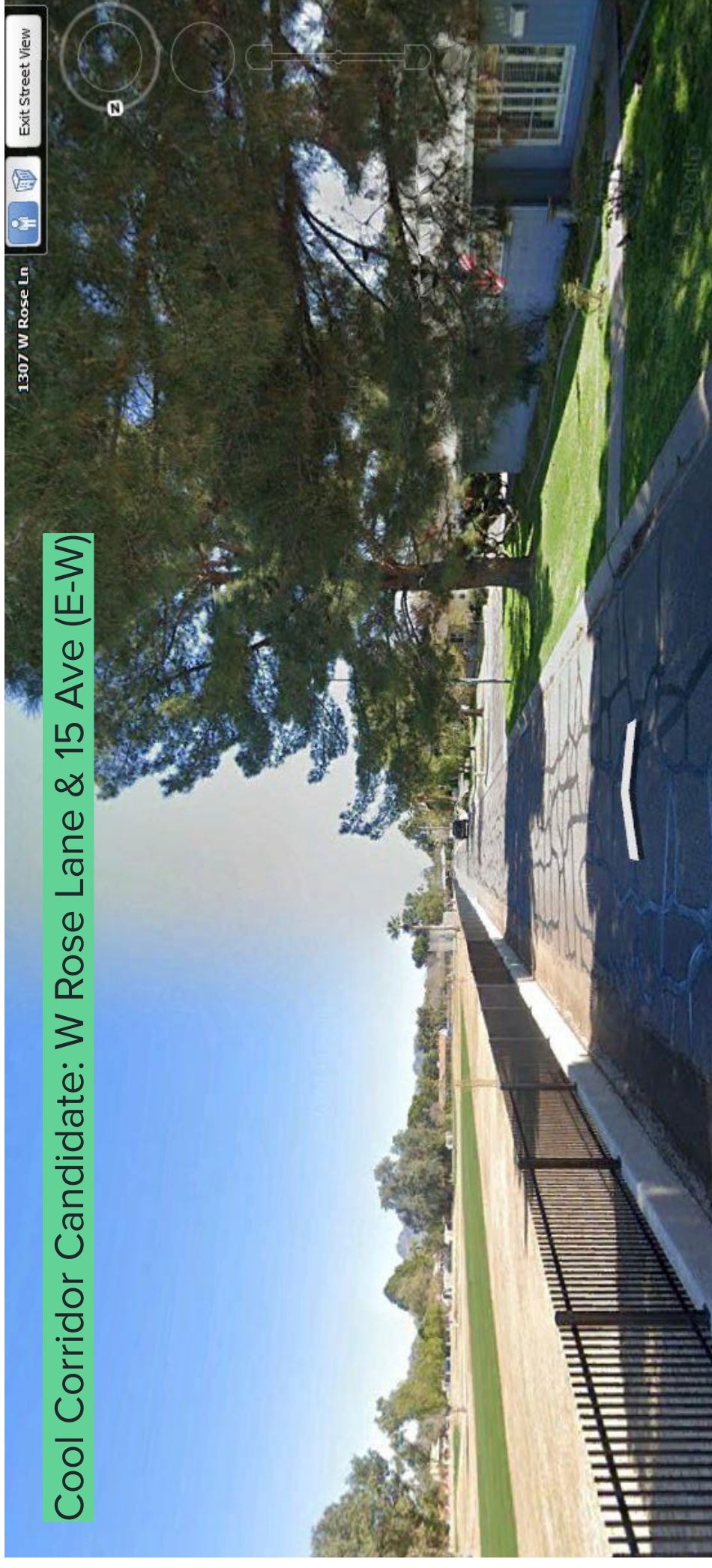
Cool Corridor Candidate: 11th Ave & McDowell (N-S)

Street View

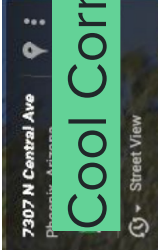


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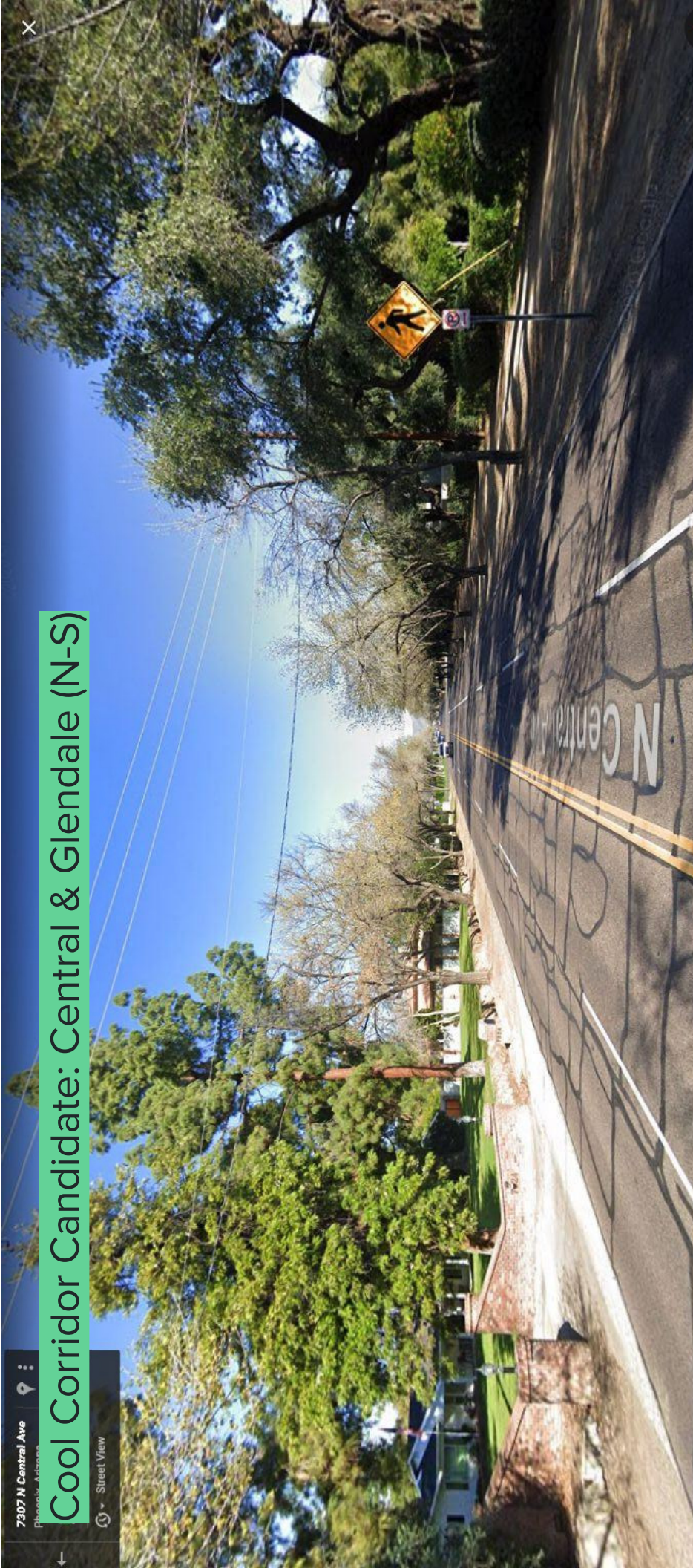
Cool Corridor Candidate: W Rose Lane & 15 Ave (E-W)



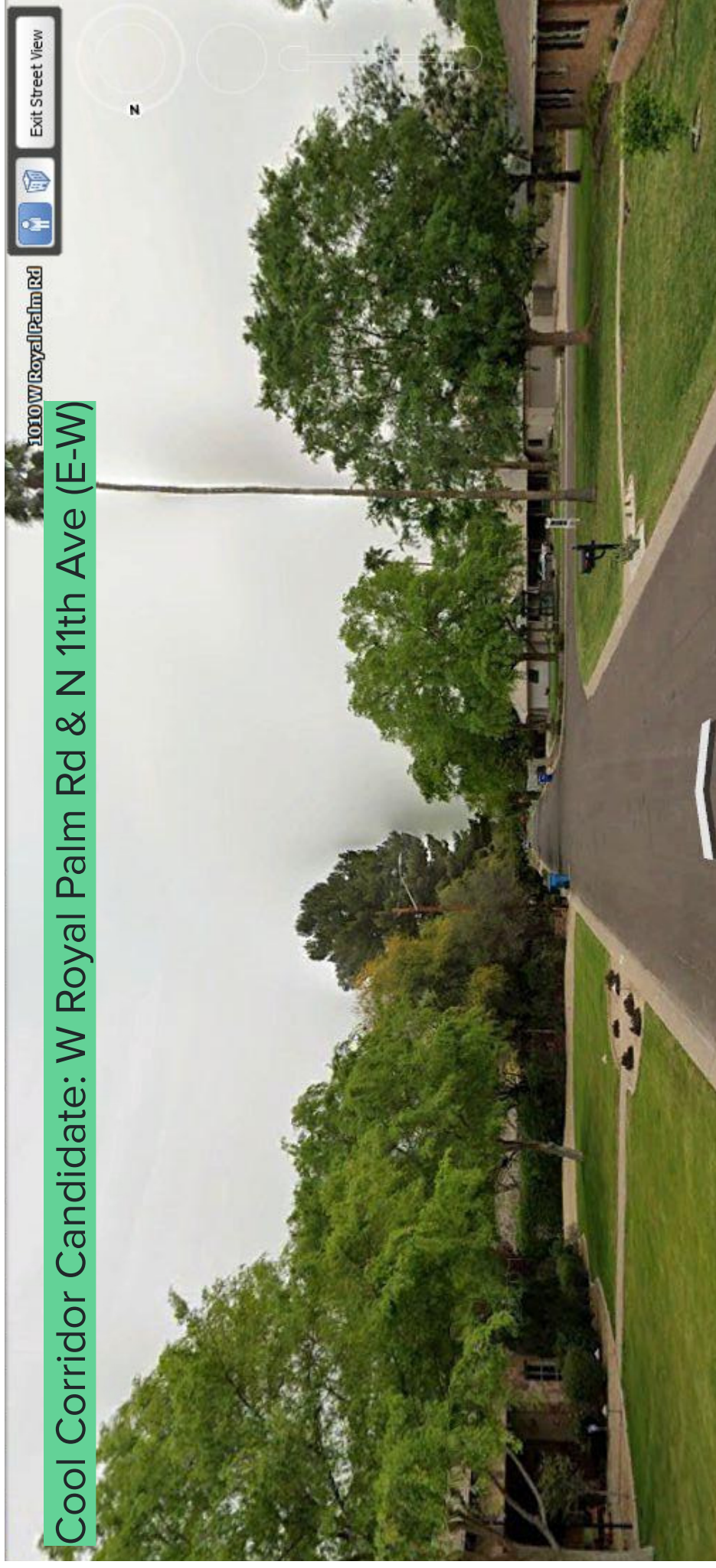
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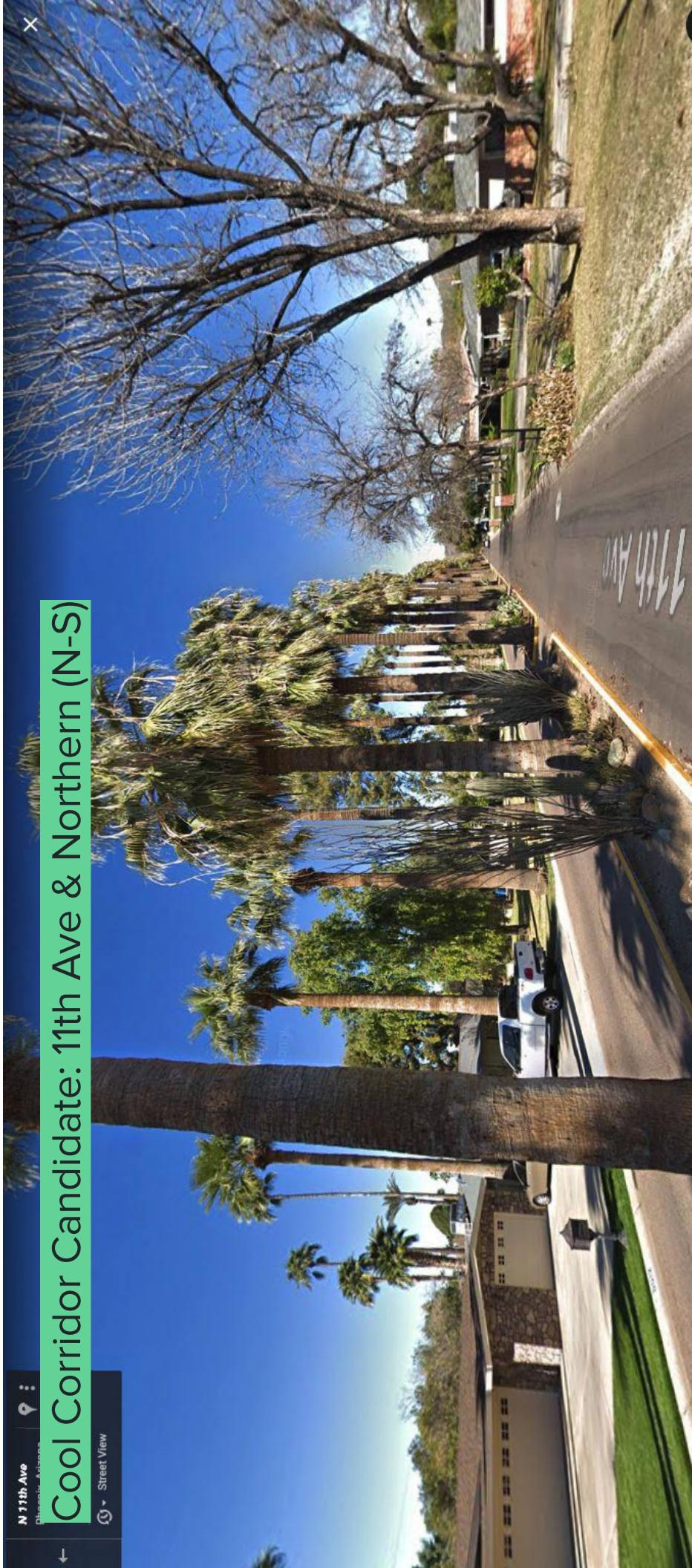
Cool Corridor Candidate: Central & Glendale (N-S)



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Cool Corridor Candidate: 11th Ave & Northern (N-S)

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