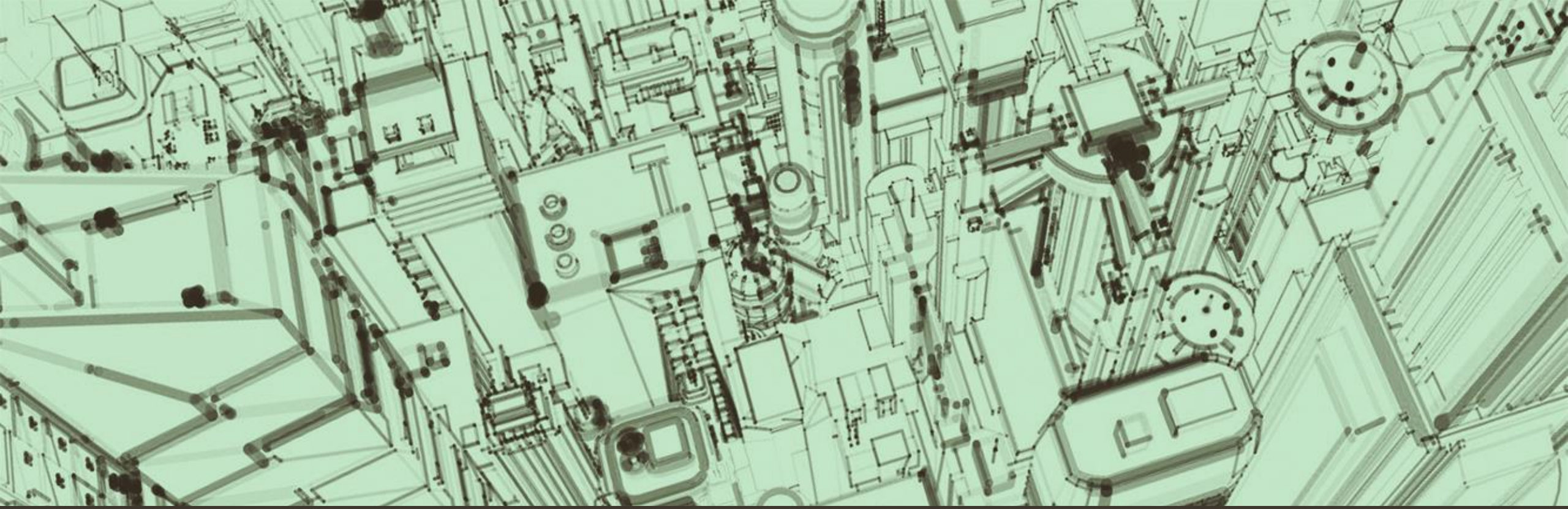
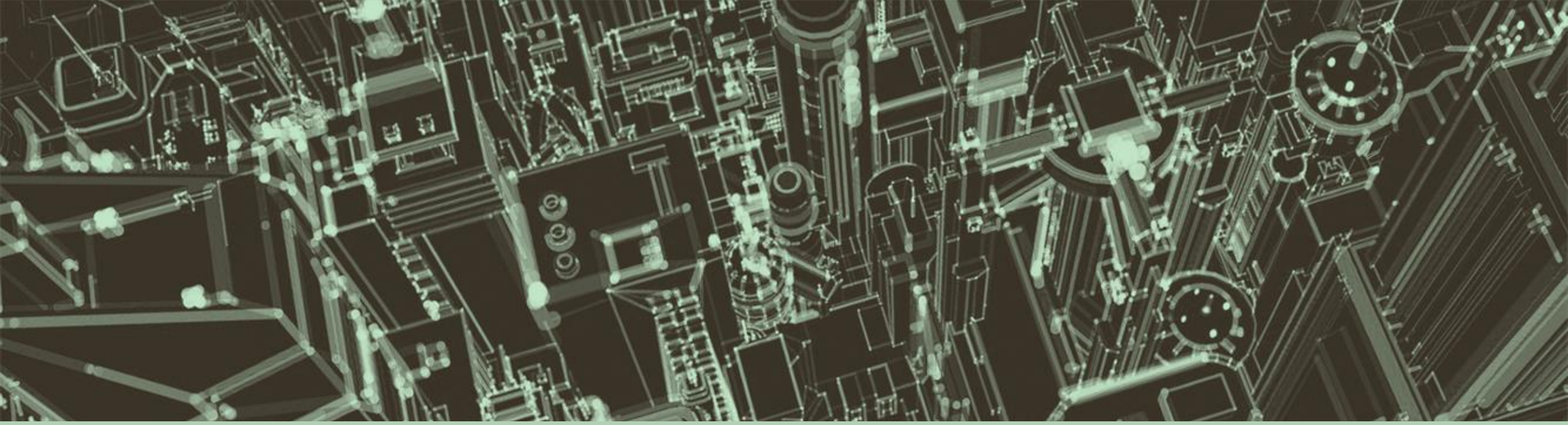


ATLS

Automated Traffic Light System

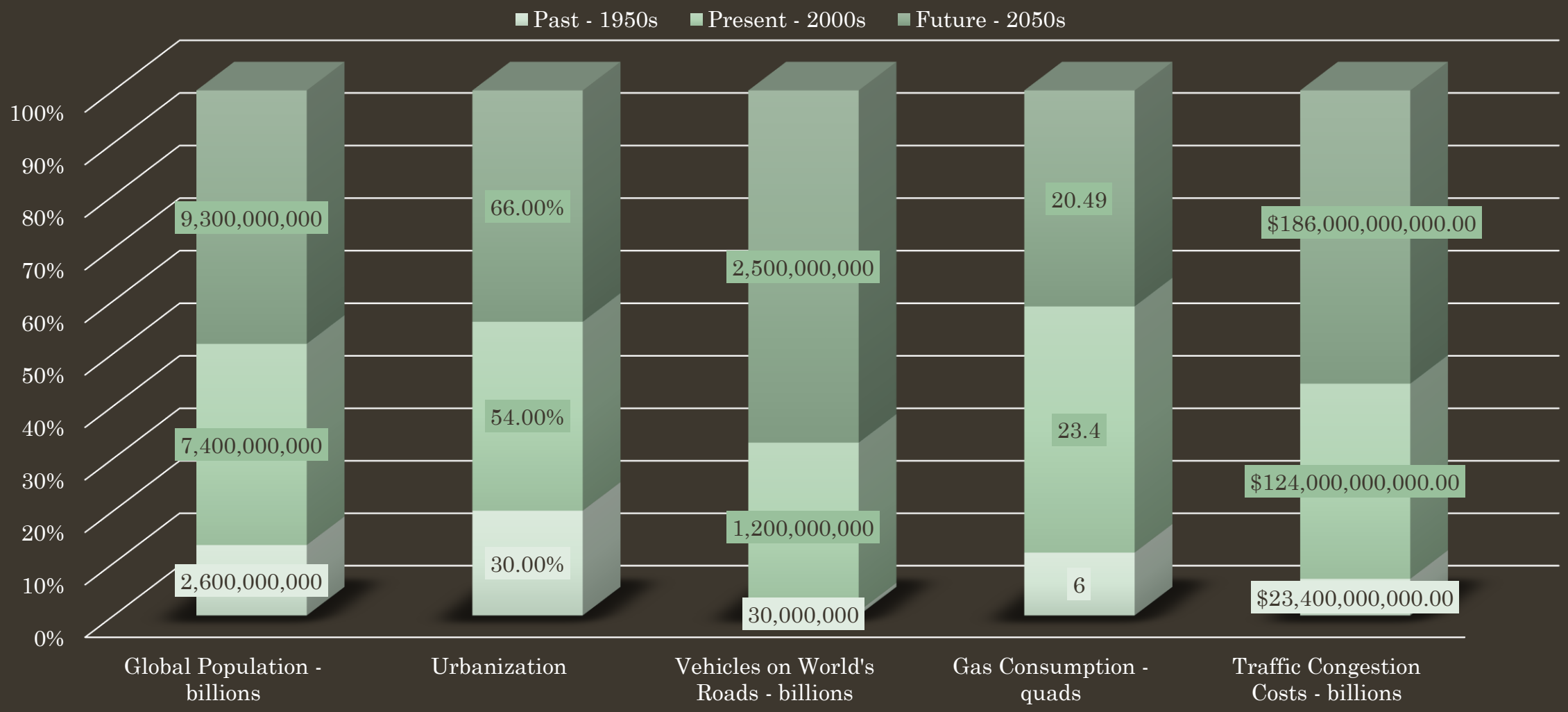
What is ATLS?



Supporting Evidence

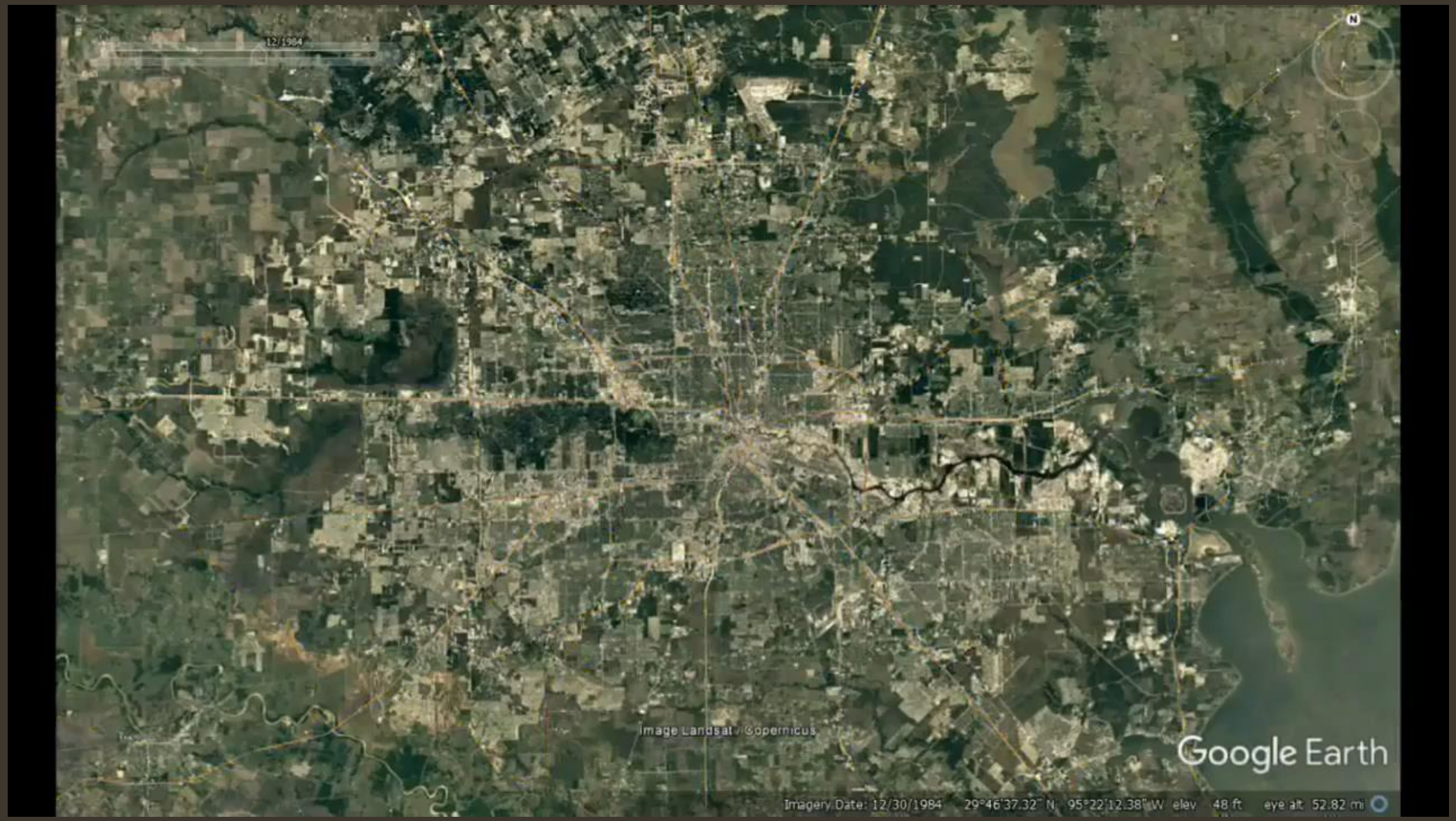
Historic Timeline
Existing Systems and Technologies
Future of Transportation Preparation

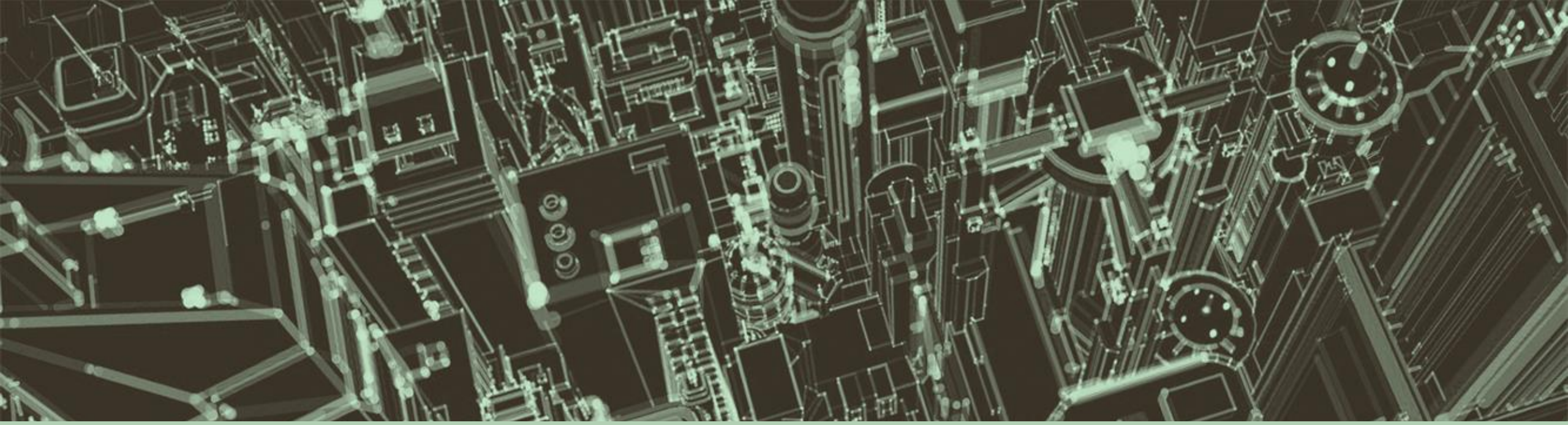
Historic Timeline



Existing Systems and Technologies

Future of Transportation Preparation

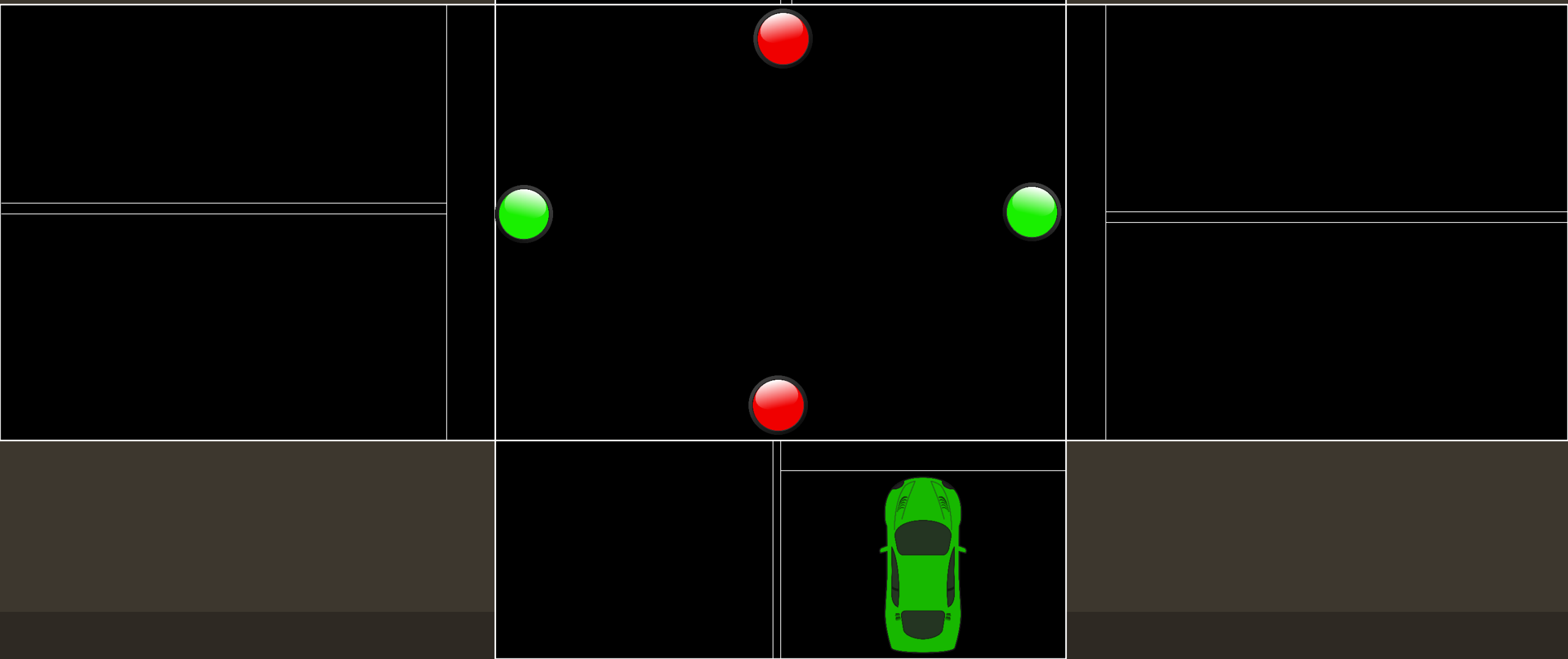




Five Scenarios

One car waiting at red light
Road congestion on one lane going one way
Left turn lane congested with no other flowing traffic
Left turn lane left unchanged if nobody is in the left turn lane
Emergency first responders designated routes from their station to location of emergency

1. One vehicle waiting at red light



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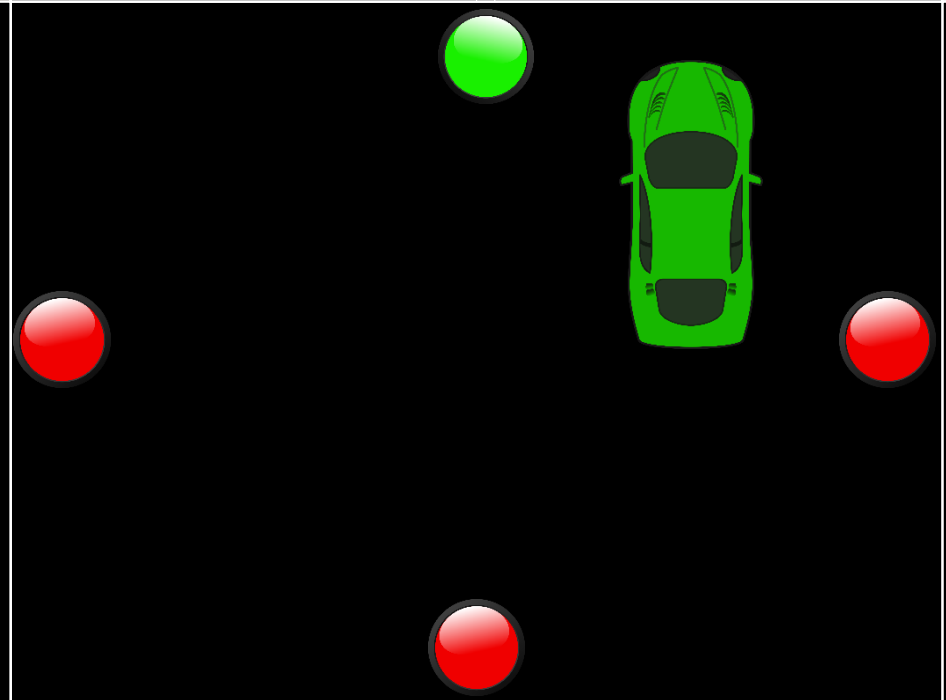
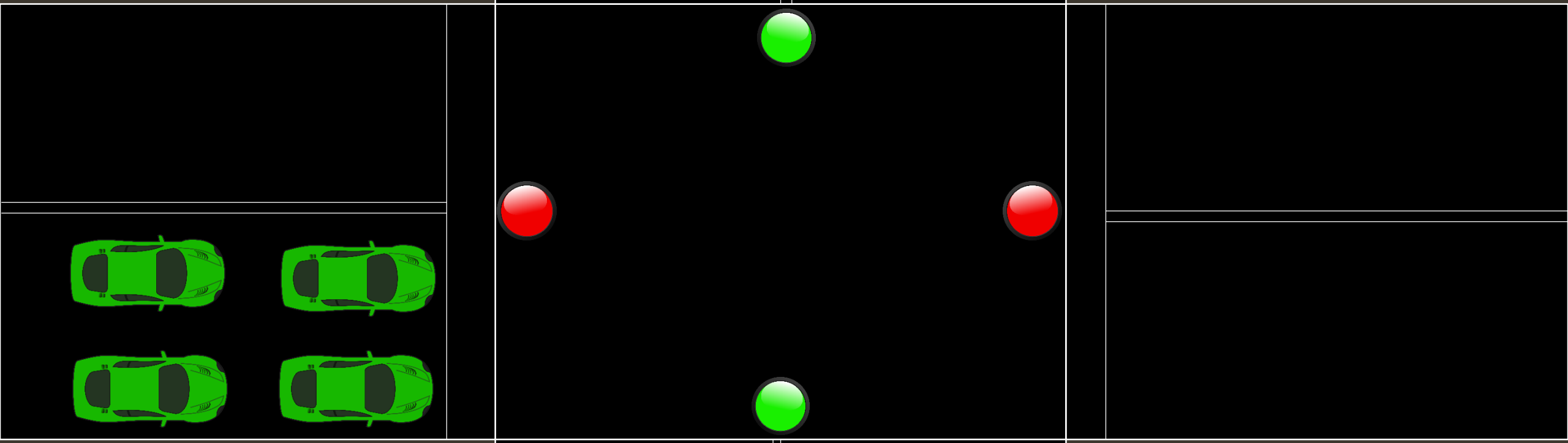


2. Road congestion for one lane



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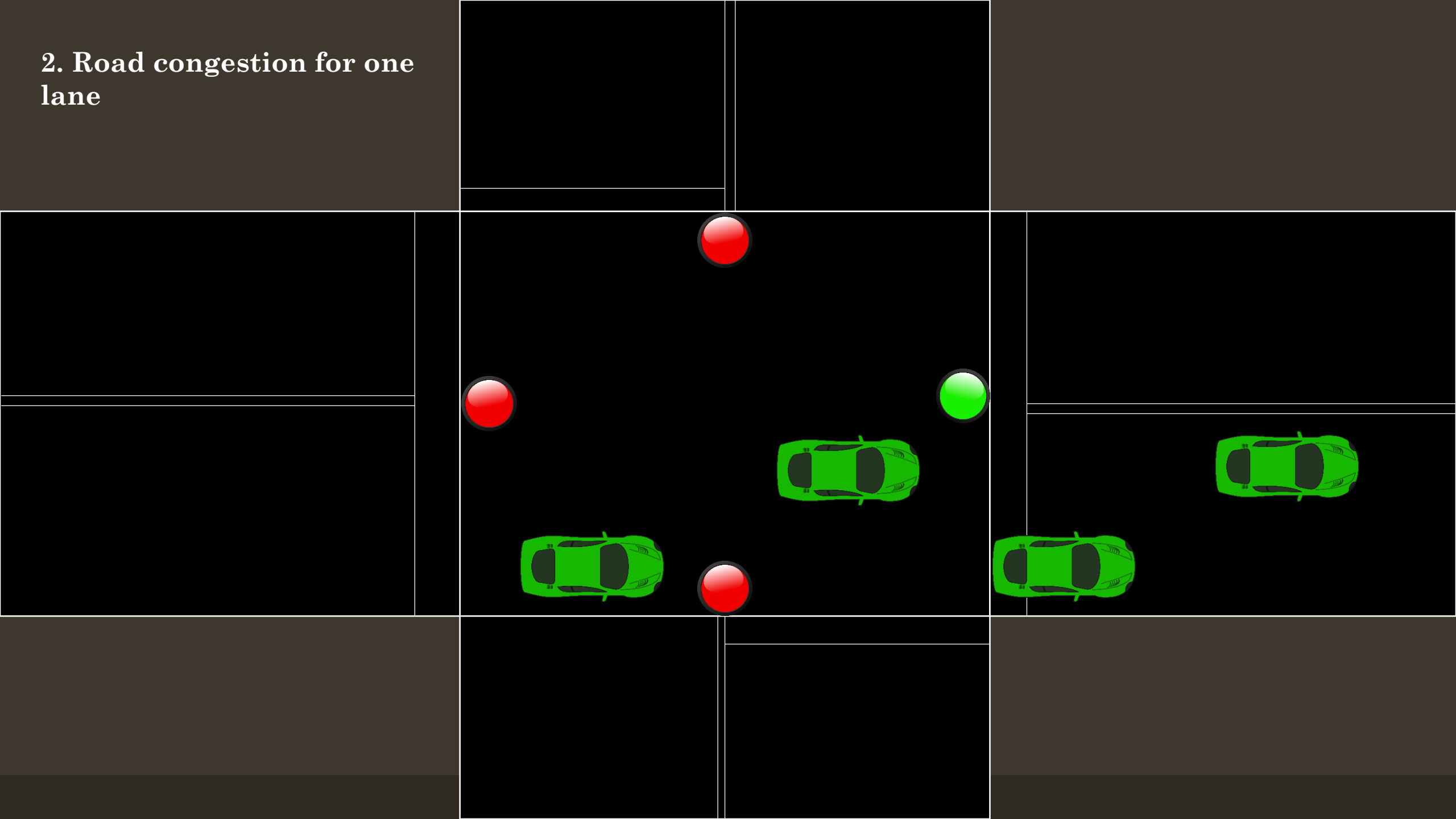
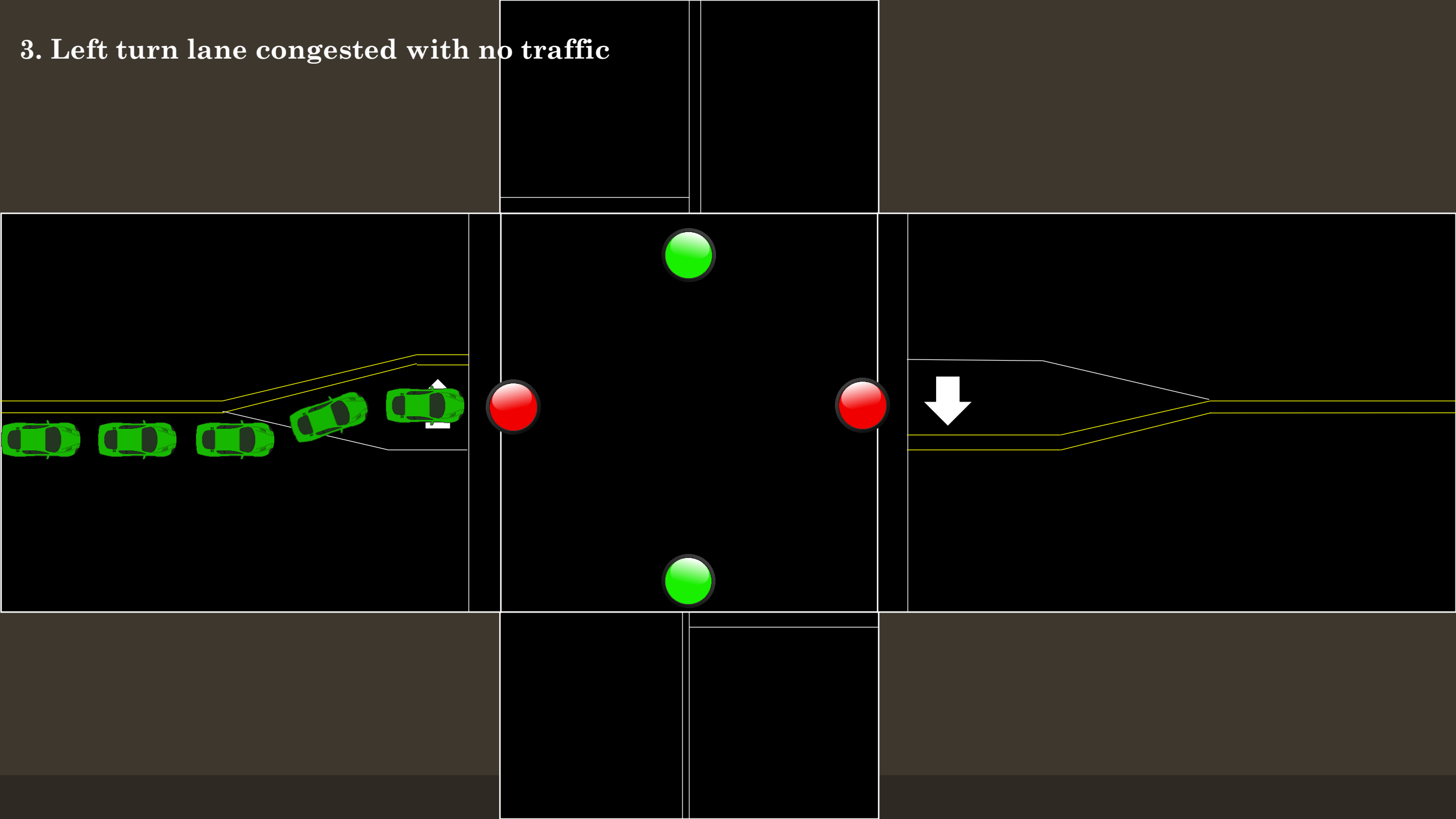


3. Left turn lane congested with no traffic



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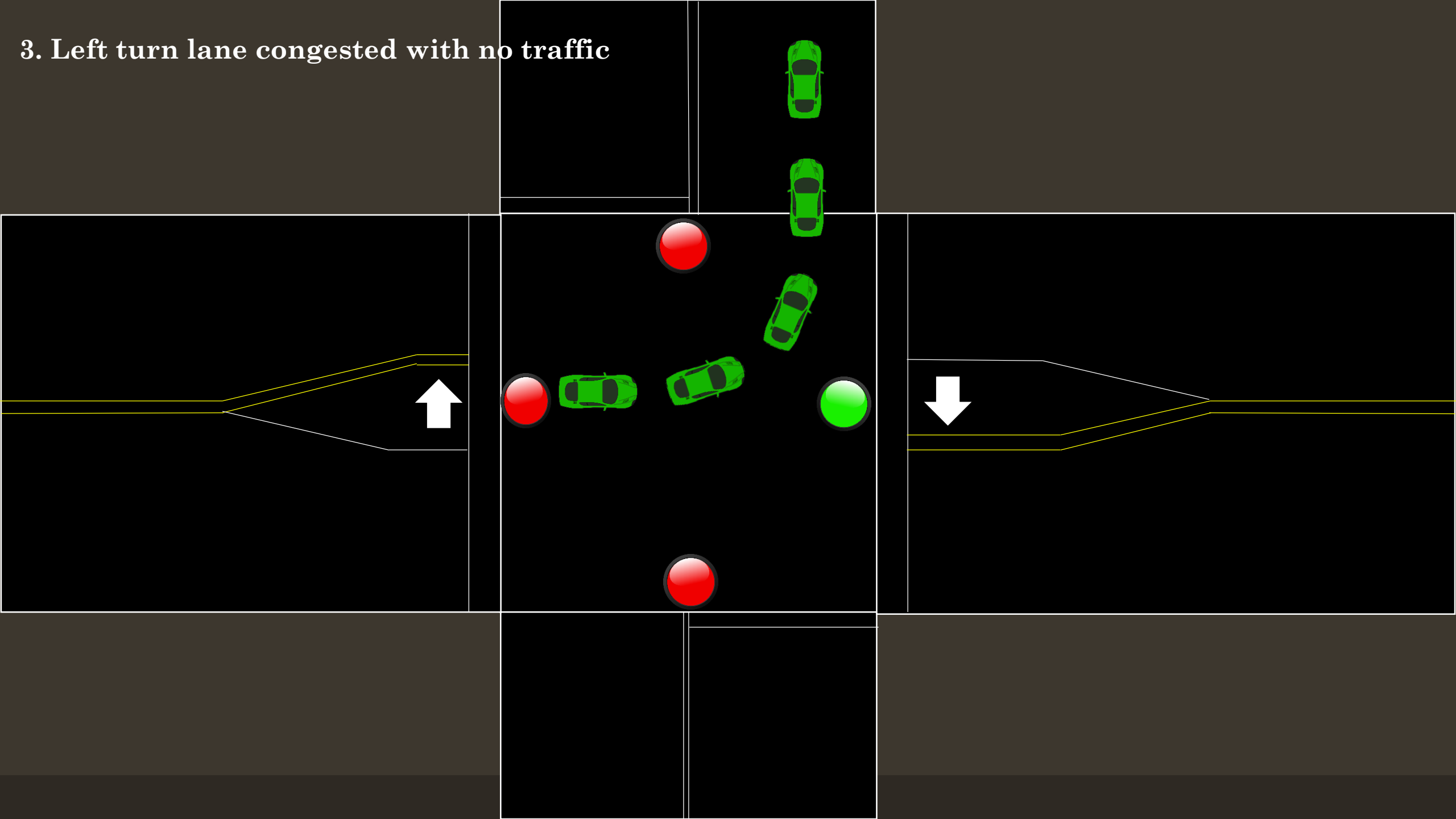
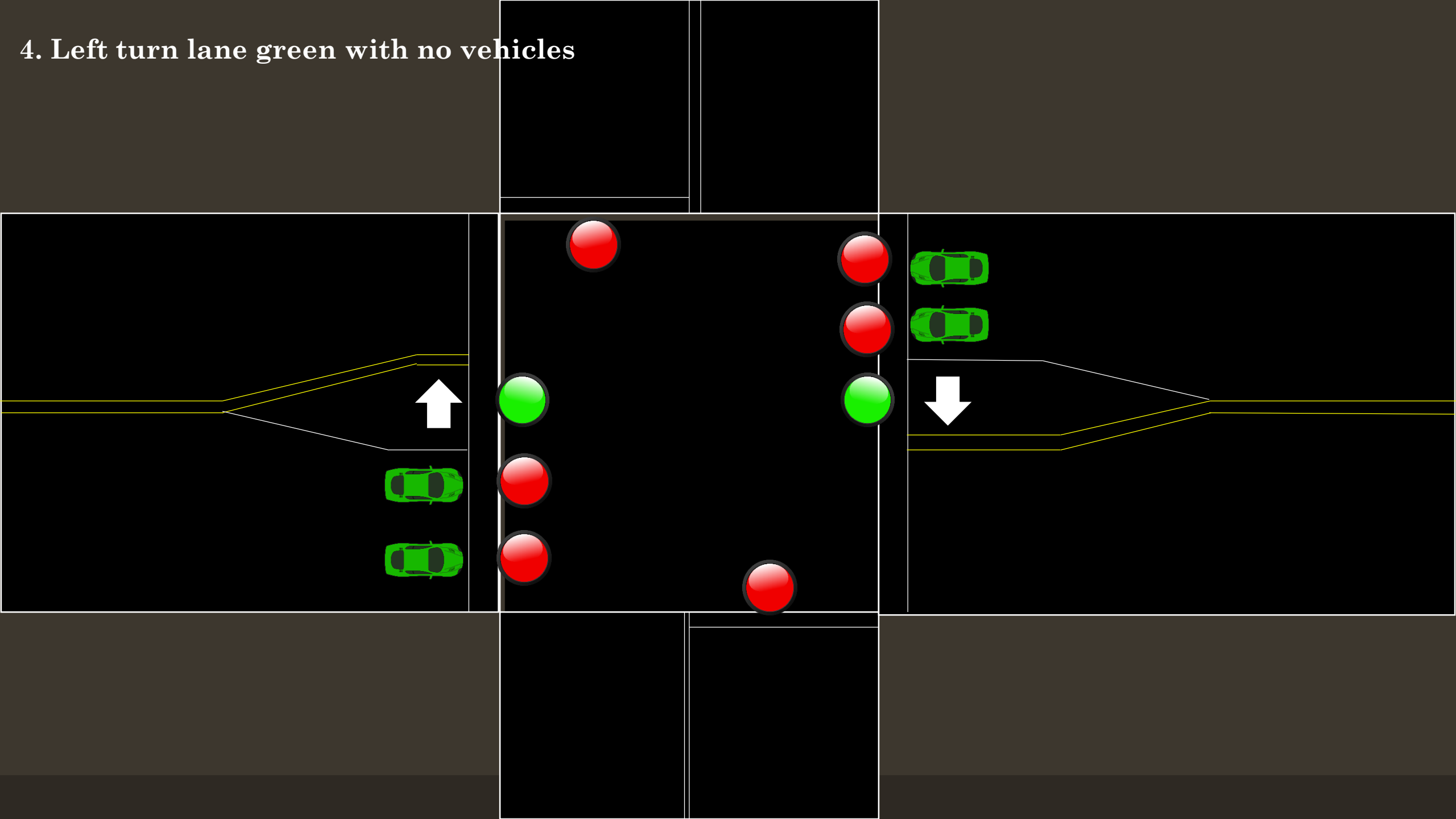


4. Left turn lane green with no vehicles



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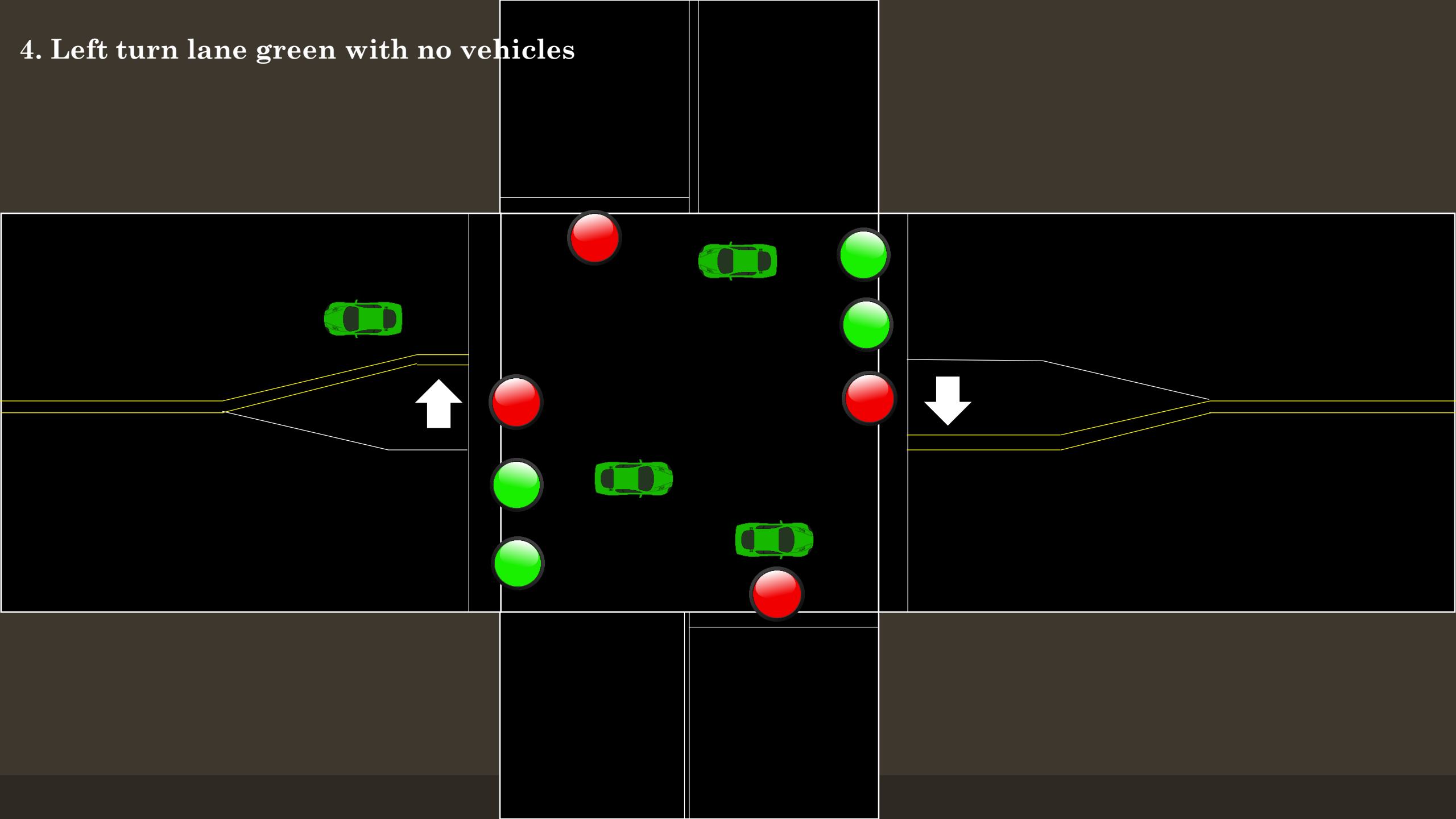
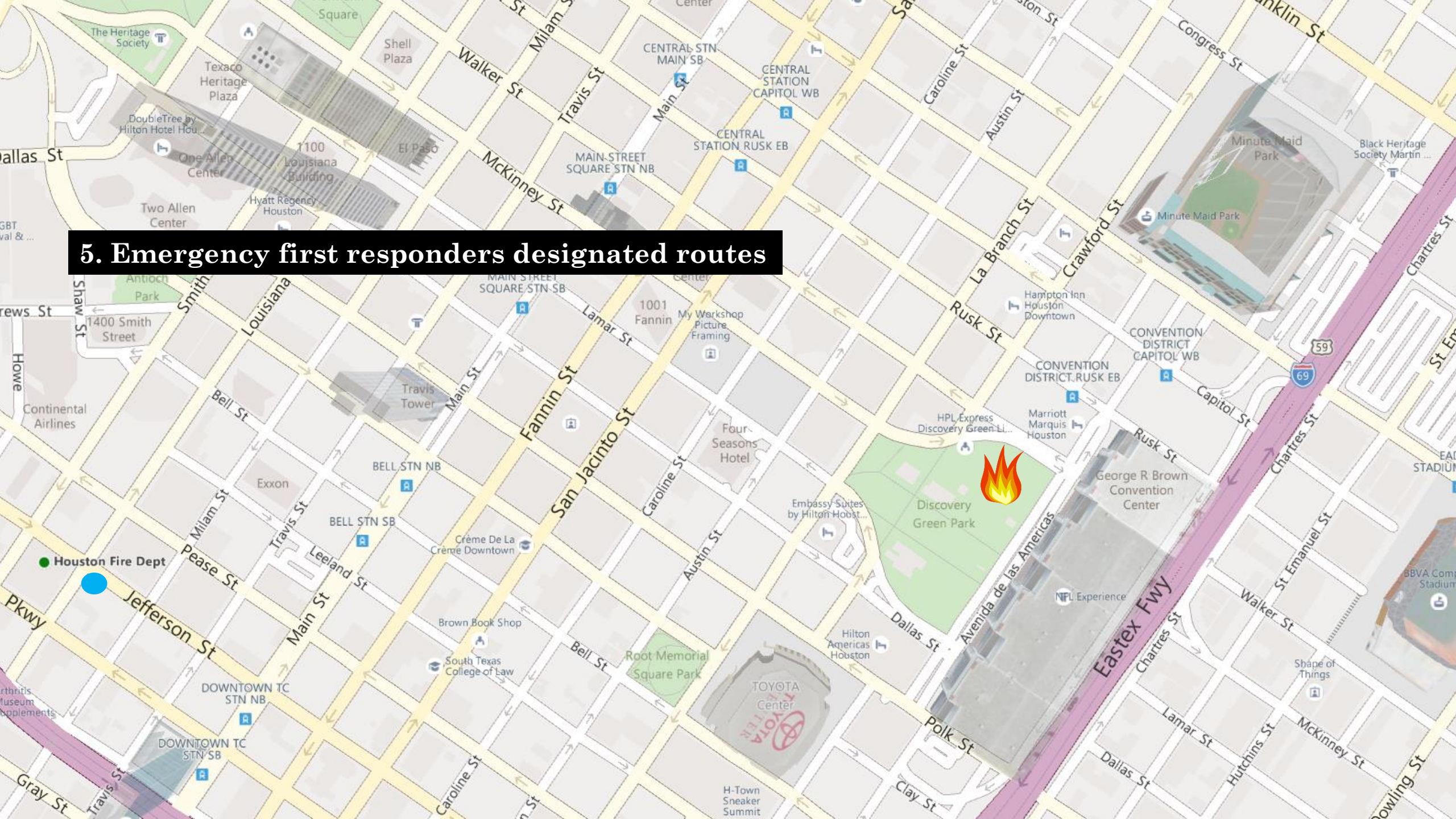
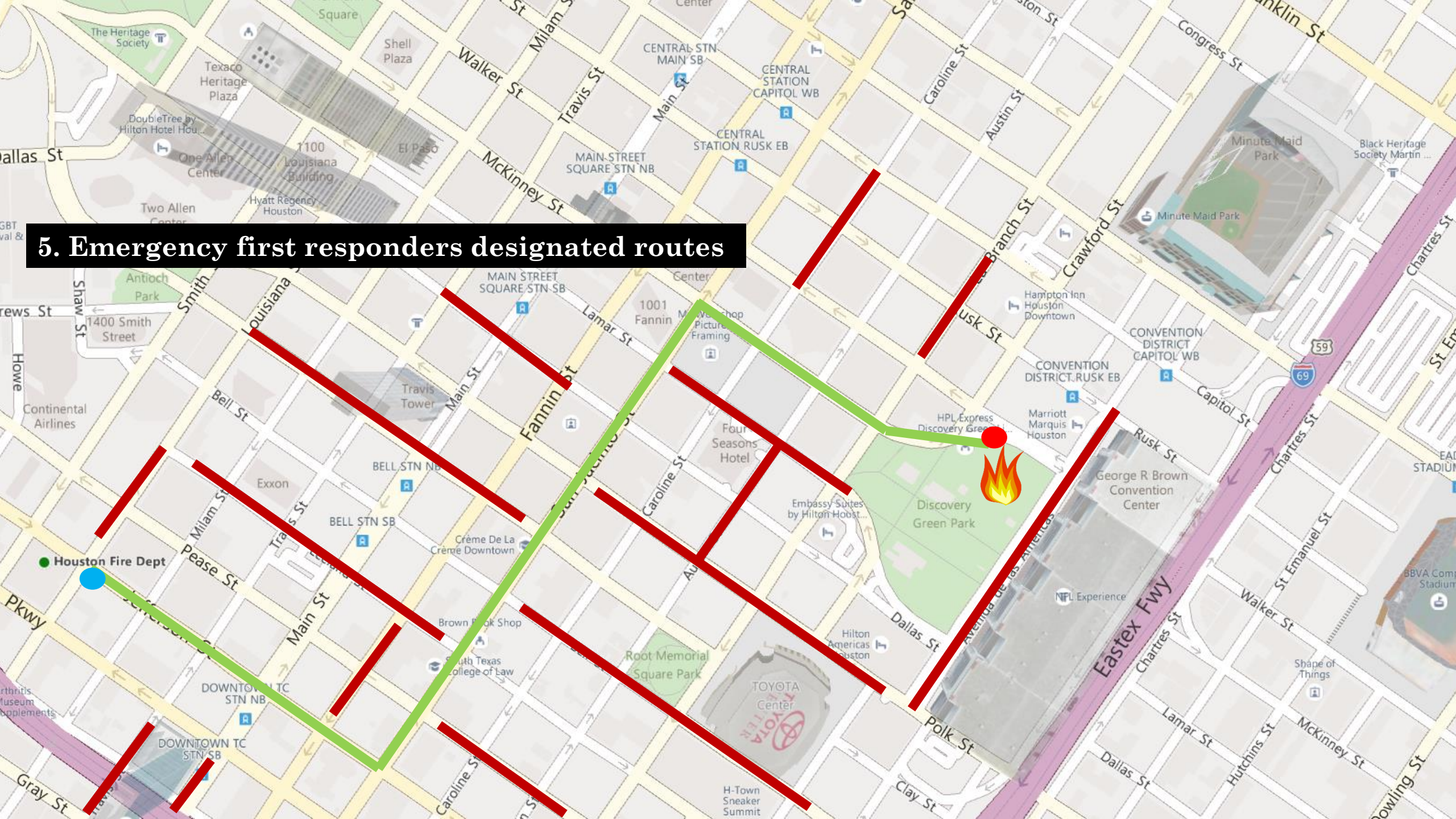


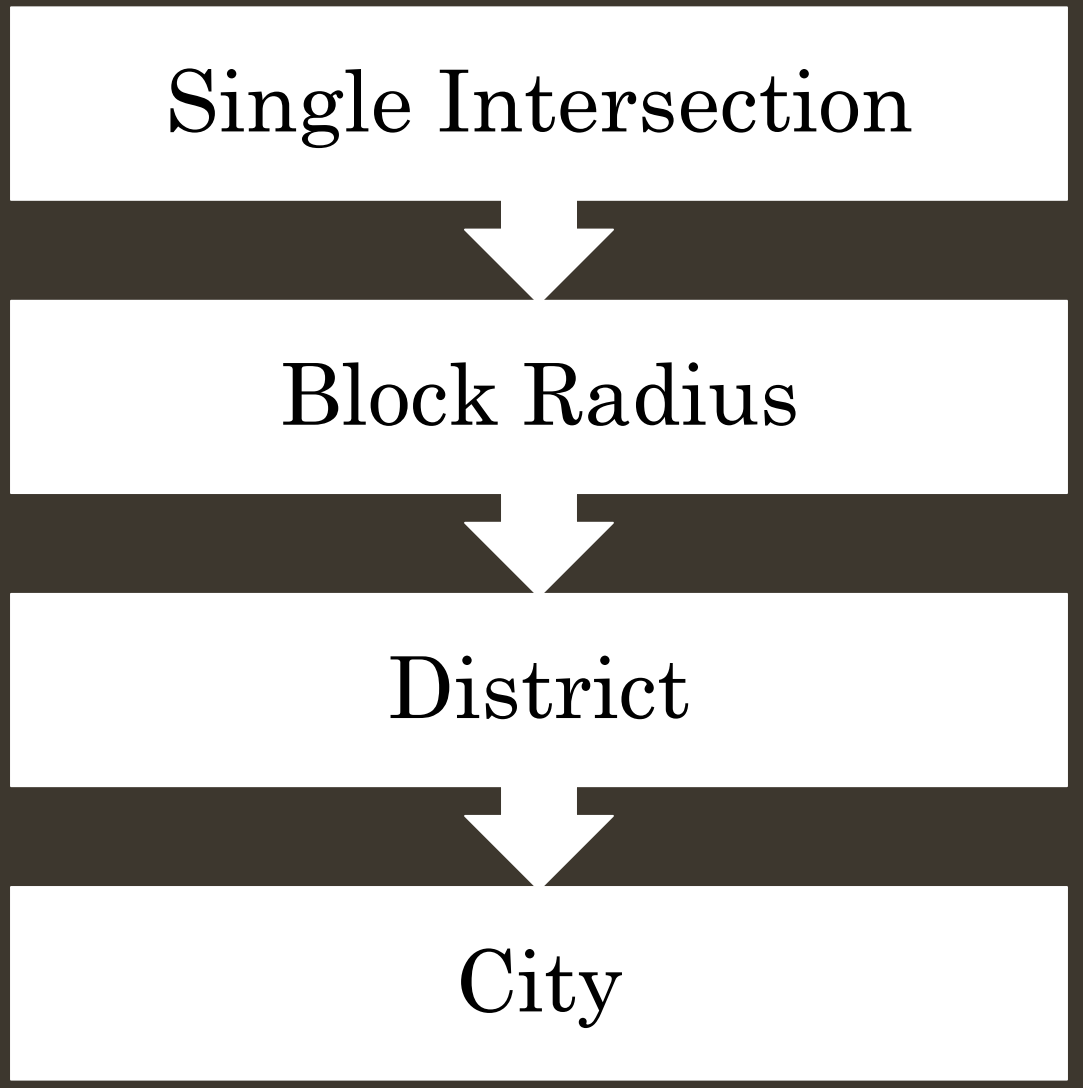

5. Emergency first responders designated routes
Houston Fire Dept
Jefferson St
Pkwy
Pease St
Bell St
Lamar St
Polk St
Dallas St
Clay St
Gray St
Walker St
McKinney St
Rusk St
Crawford St
La Branch St
Austin St
Caroline St
Fannin St
San Jacinto St
Louisiana
Smith
Milam St
Travis St
Main St
Leeland St
Howe
Shaw St
Capitol St
Congress St
Franklin St
Chartres St
St Emanuel St
Hutchins St
Eastex Fwy
Avenida de las Americas
Discovery Green Park
George R Brown Convention Center
Minute Maid Park
Four Seasons Hotel
Hilton Americas Houston
Hampton Inn Houston Downtown
Marriott Marquis Houston
Embassy Suites by Hilton Houst...
HPL Express Discovery Green Li...
CONVENTION DISTRICT CAPITOL WB
CONVENTION DISTRICT RUSK EB
CENTRAL STN MAIN SB
CENTRAL STATION CAPITOL WB
CENTRAL STATION RUSK EB
MAIN STREET SQUARE STN NB
MAIN STREET SQUARE STN SB
BELL STN NB
BELL STN SB
DOWNTOWN TC STN NB
DOWNTOWN TC STN SB
1001 Fannin
1100 Louisiana Building
1400 Smith Street
One Allen Center
Two Allen Center
Texaco Heritage Plaza
Shell Plaza
The Heritage Society
Hyatt Regency Houston
DoubleTree by Hilton Hotel Hou...
Travis Tower
Exxon
Continental Airlines
Antioch Park
Root Memorial Square Park
Brown Book Shop
South Texas College of Law
Crème De La Crème Downtown
My Workshop Picture Framing
TOYOTA Center
NFL Experience
Shape of Things
Black Heritage Society Martin ...
H-Town Sneaker Summit
59
69

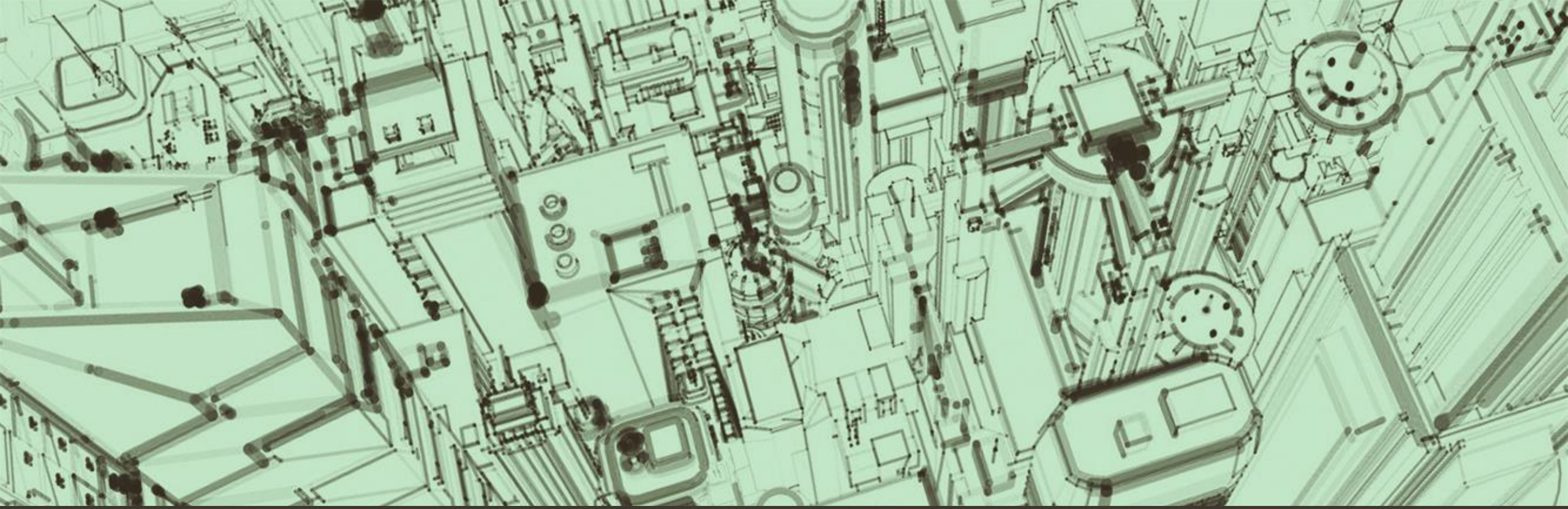
5. Emergency first responders designated routes



ATLS Implementation Proposal

- Single Intersection
  - Entry point to integrate web application within existing infrastructure
  - Identifying roadway objects and traffic patterns via camera feeds
  - Measure traffic speed, flow, density, and peak hour factor
- Block Radius
  - Implement autonomous light timings
  - Communicate with multiple intersections
  - Update web application
- District
  - Improve traffic congestion through previous steps
  - Implement system on large scale
  - Prepare web application within other city and organization use
- City
  - Share successes to alleviate traffic congestion
  - Collection of data and implement systems for wider use
  - Prepare regulation procedures for future modes of transportation





ATLS

Automated Traffic Light System

The ATLS Effect