ARIZONA FORWARD

AUTONOMOUS AND CONNECTED TRANSPORTATION

What We Heard from Arizona Communities

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Contents

Introduction

Transportation systems are evolving globally. Arizona's transportation future requires a system that is safe, equitable, effective, reliable, efficient, environmental-friendly and flexible to reflect the values and needs of all communities. How does Arizona develop a modern transportation system and supporting policies that will best meet the needs of urban and rural communities statewide? The implementation of multi-modal transportation for Arizona, including autonomous and connected vehicles (AV/CVs), can help to greatly reduce carbon in the atmosphere, lessen the impact of climate change, improve air quality, manage land use, maintain efficient use of the state's existing transportation infrastructure and secure the state's economic future – especially as Arizona continues to grow at a continuous, rapid pace. The fast pace of change in the technology sector means that Arizona must plan ahead to influence how new technologies shapes its communities. Planning for a statewide transportation and mobility system that includes AV/CVs, while incorporating the needs defined by urban and rural communities, requires attention today.

EXECUTIVE SUMMARY

TOWN HALL MEETINGS

The state of Arizona's leadership in AV/CV testing has inspired emerging technologies to progress. In 2018 and 2019, Arizona Forward's Transportation Committee made it a priority to bring stakeholders together in a series of town hall meetings across the state to collect feedback from urban and rural communities as it relates to AV/CV vehicles.

The Arizona Forward Transportation Committee hosted three town hall meetings across Arizona from September 2018 to February 2019. The meetings initiated a statewide discussion on how AV/CV vehicles may impact the future of transportation in Arizona communities. Town halls were hosted in Flagstaff, Tucson, and Phoenix. Interested stakeholders in communities of varying sizes attended the meetings. Participants included professionals related to the transportation industry including engineers, law enforcement officers, urban planners, educators, representatives from non-profits, and other municipal leaders.

Three national transportation presenters provided information on the current state of AV/CV development in the following areas: technology, land use, policy and legal implications. Following the presentations, participants took part in a facilitated discussion that focused on how rural and urban communities are preparing for AV/CV integration. Participants were also asked to identify primary opportunities and challenges for their communities based on their professional experience and perspectives.

In addition to the three town halls, Arizona Forward held a session at the Rural Transportation Summit on October 25, 2018, in Lake Havasu City to further gain perspective from additional rural communities in Arizona.

A total of 250 transportation-related professionals were involved in the series of sessions statewide.

WHAT ARE AUTONOMOUS VEHICLES (AVs)?

An AV can move and guide itself without human input, and can perceive its surroundings through a combination of sensors, cameras, radar, and AI. There are different levels of automation, ranging from driver assistance technologies to fully autonomous vehicles.

WHAT ARE CONNECTED VEHICLES (CVs)?

A CV includes devices that communicate bidirectionally with other vehicles, devices, networks and services.

Statewide Town Hall Locations

THE STATE OF AUTONOMOUS AND CONNECTED TRANSPORTATION

TECHNOLOGY ADVANCEMENTS - TIMELINE

AV/CV technology is rapidly developing. While there are several factors that can play into the rate of adoption of AV/CVs, most experts in the technology and transportation industry agree that a reasonable scenario for deployment in a widespread fashion will occur over the course of the next several decades.

2020s:

Modification of Arizona's current transportation system will set the stage for CV technology. Public agencies will be starting to deploy infrastructure that can communicate information with vehicles. At the same time, car manufacturers will be incorporating connectivity and other features into their new models of vehicles.

2030s:

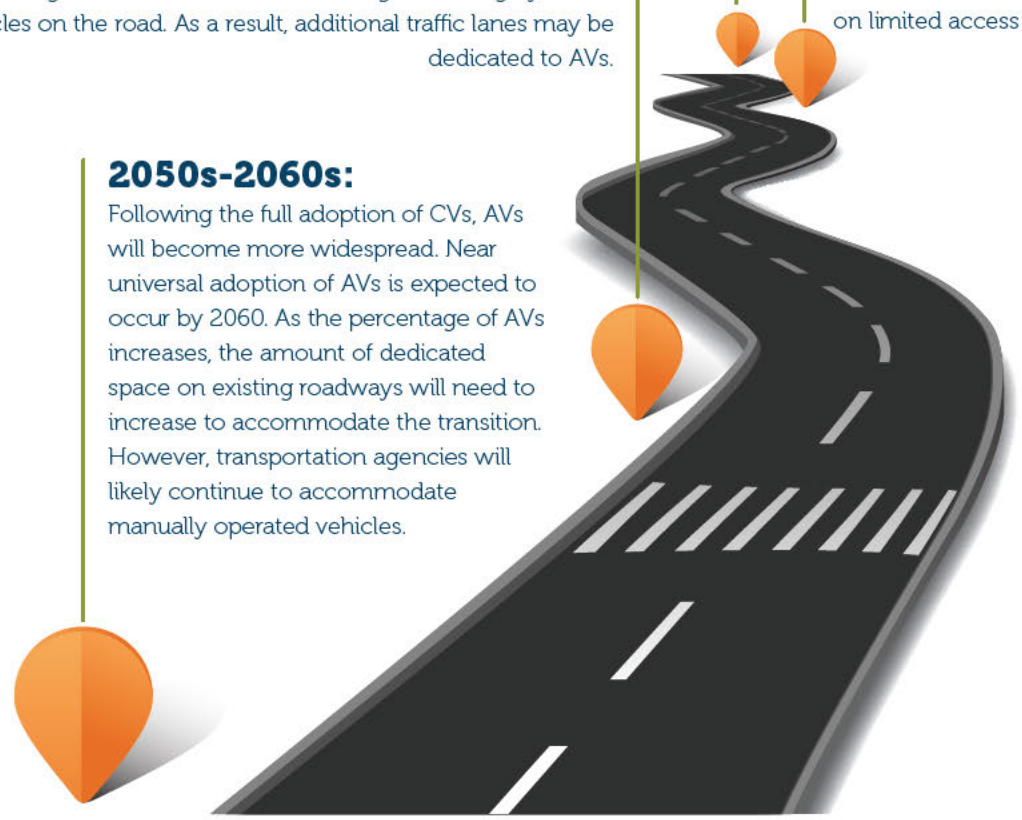
It is anticipated that the industry will be setting the stage for AVs. Projections indicate only about a quarter of all passenger vehicles will be operating at a high level of automation at this point. Automated vehicle fleets may be operating in a subscription format. To accommodate the shift toward AVs, transportation agencies may consider deploying designated AV lanes on limited access highways.

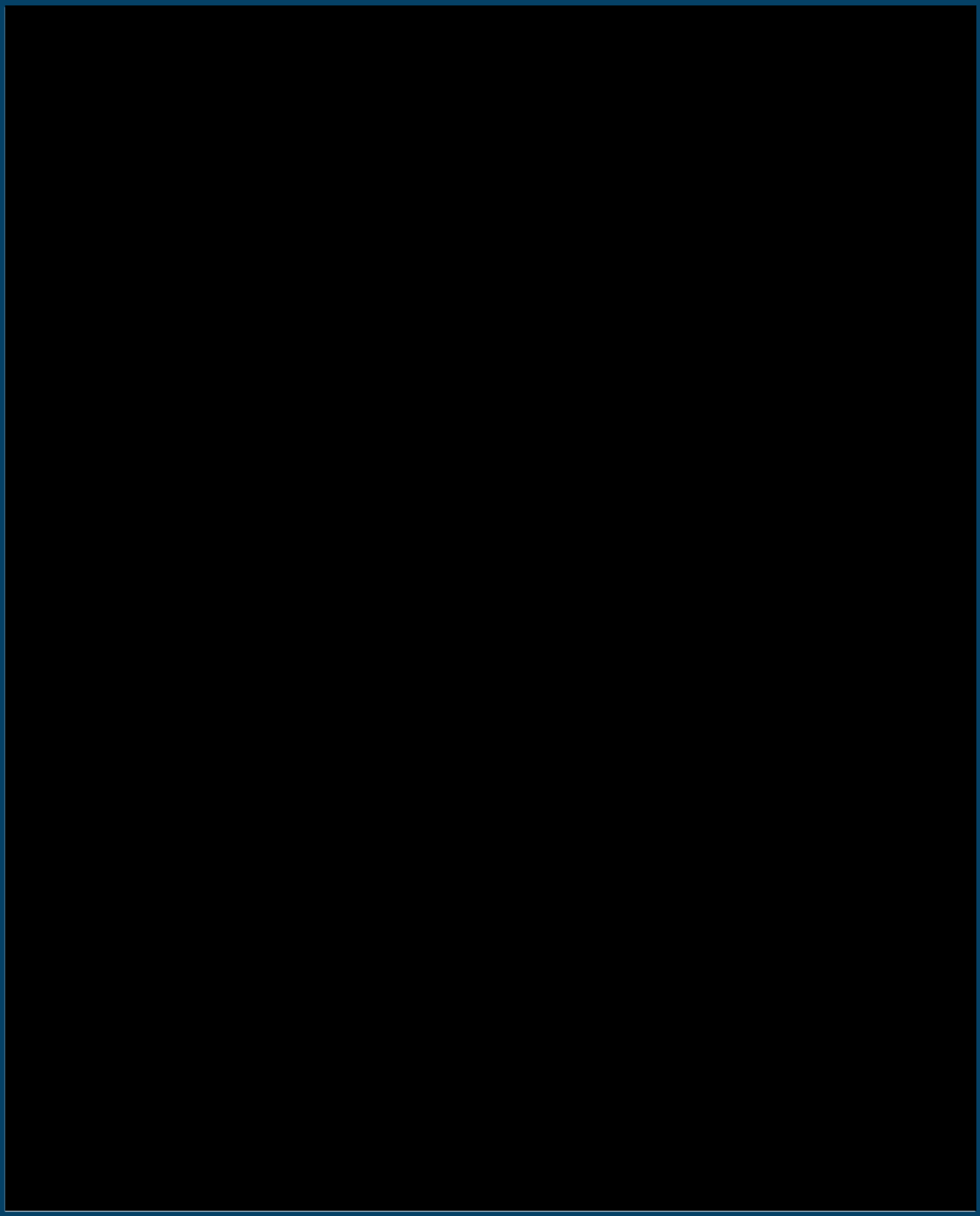
2040s:

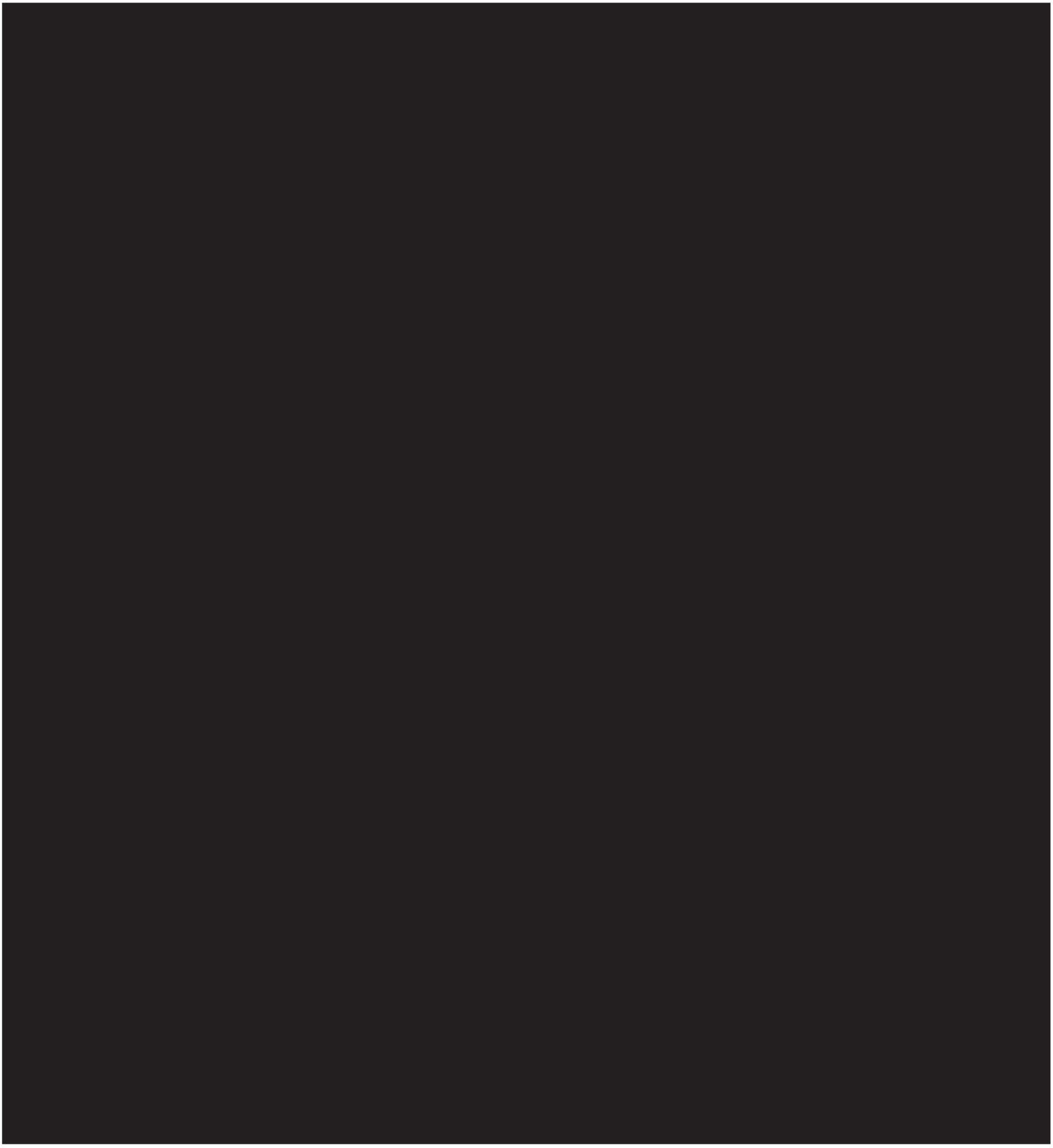
Experts anticipate full adoption of CV technology by 2040, meaning nearly every vehicle on the road will have the capability to send and receive information. Additionally, the adoption of AV technology is anticipated to grow, and will exist to some degree in roughly half of all vehicles on the road. As a result, additional traffic lanes may be dedicated to AVs.

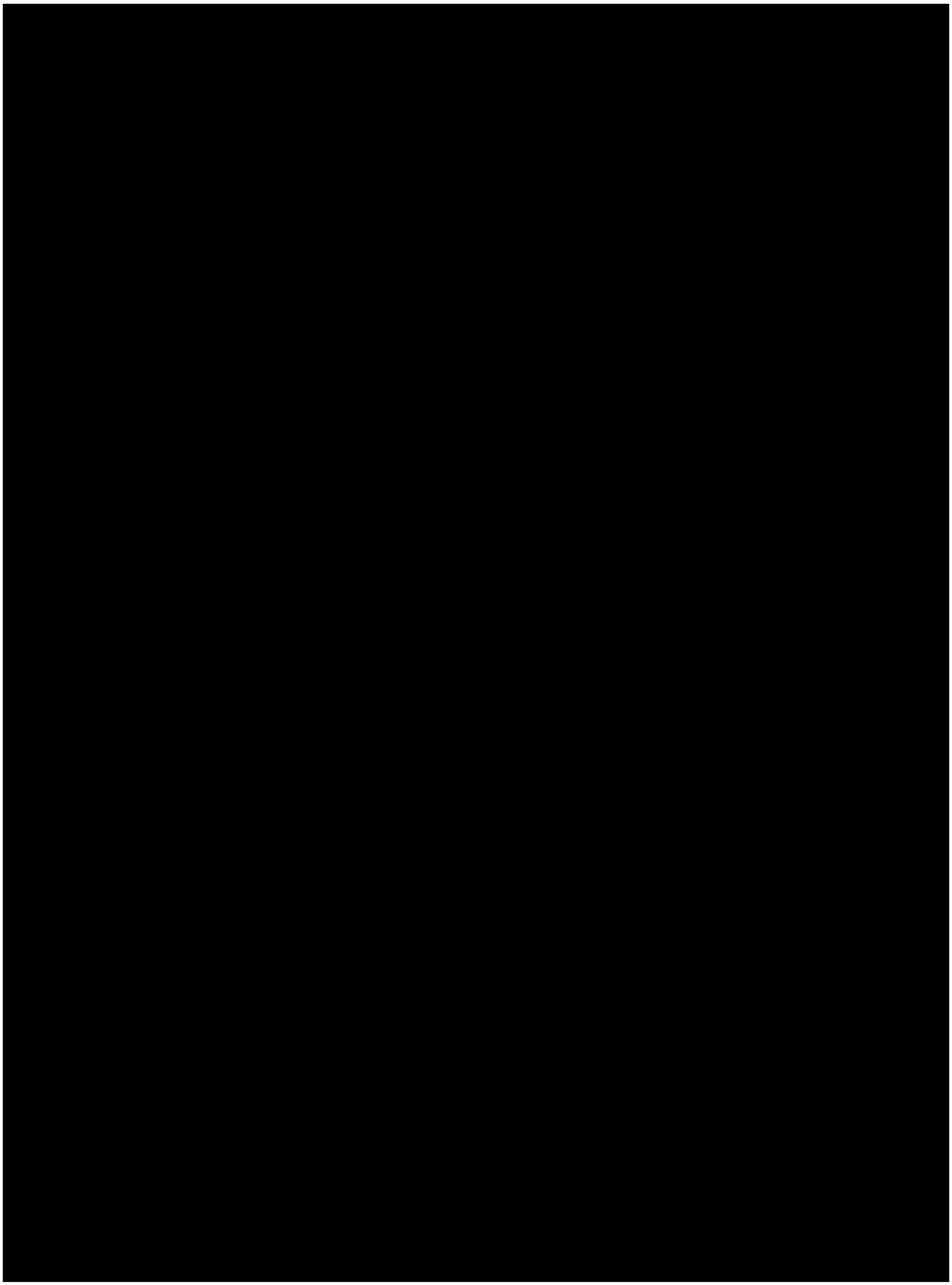
2050s-2060s:

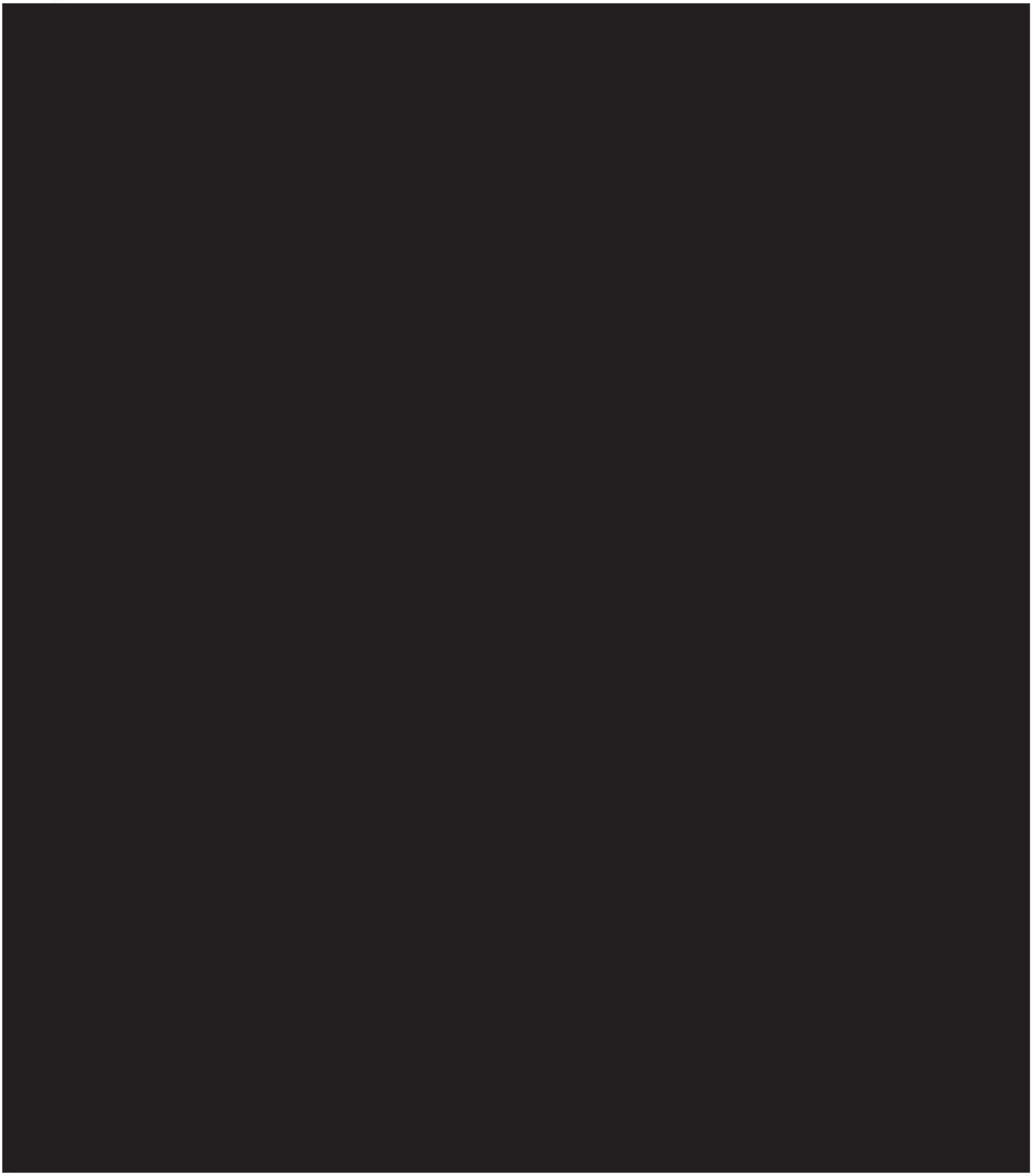
Following the full adoption of CVs, AVs will become more widespread. Near universal adoption of AVs is expected to occur by 2060. As the percentage of AVs increases, the amount of dedicated space on existing roadways will need to increase to accommodate the transition. However, transportation agencies will likely continue to accommodate manually operated vehicles.



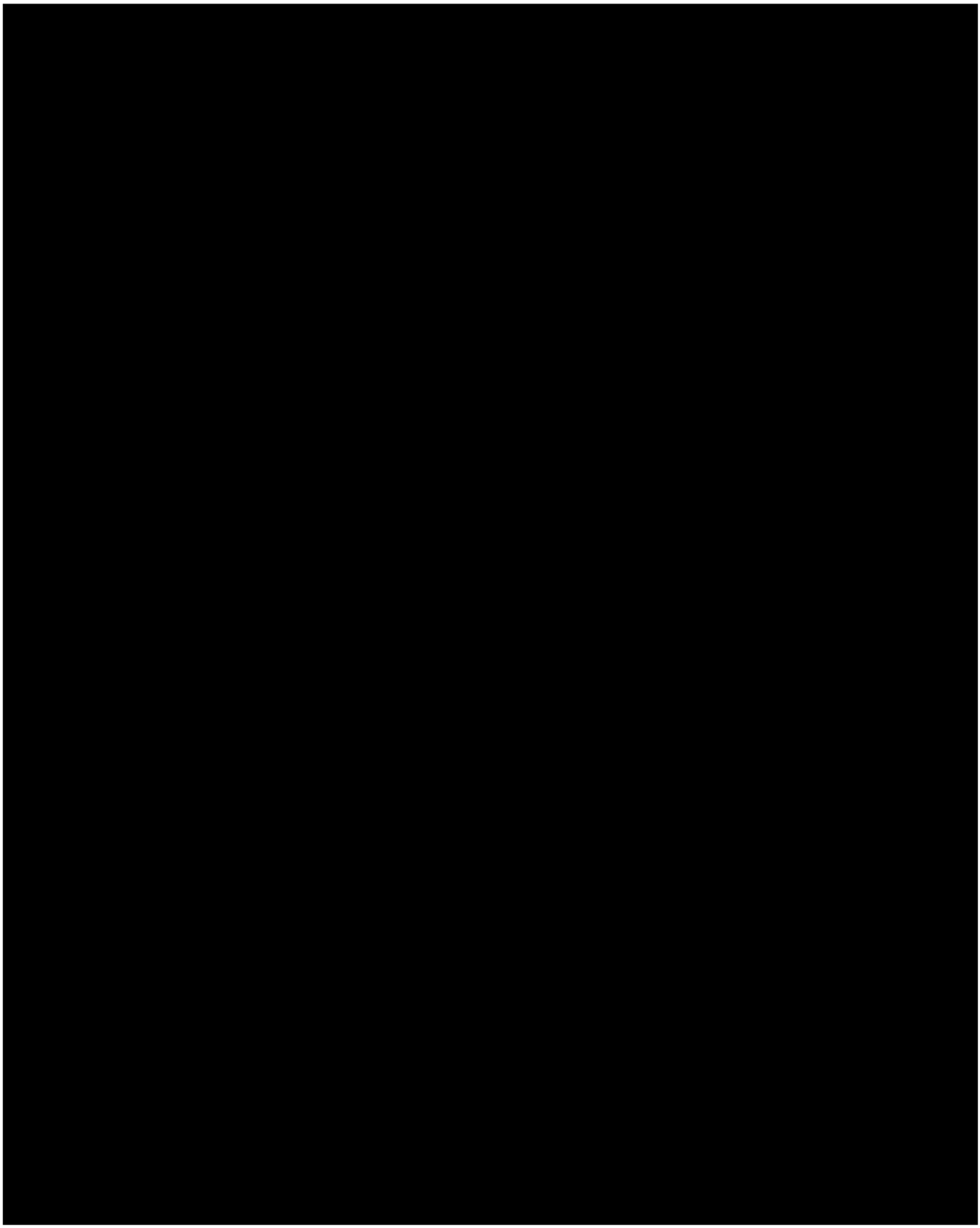


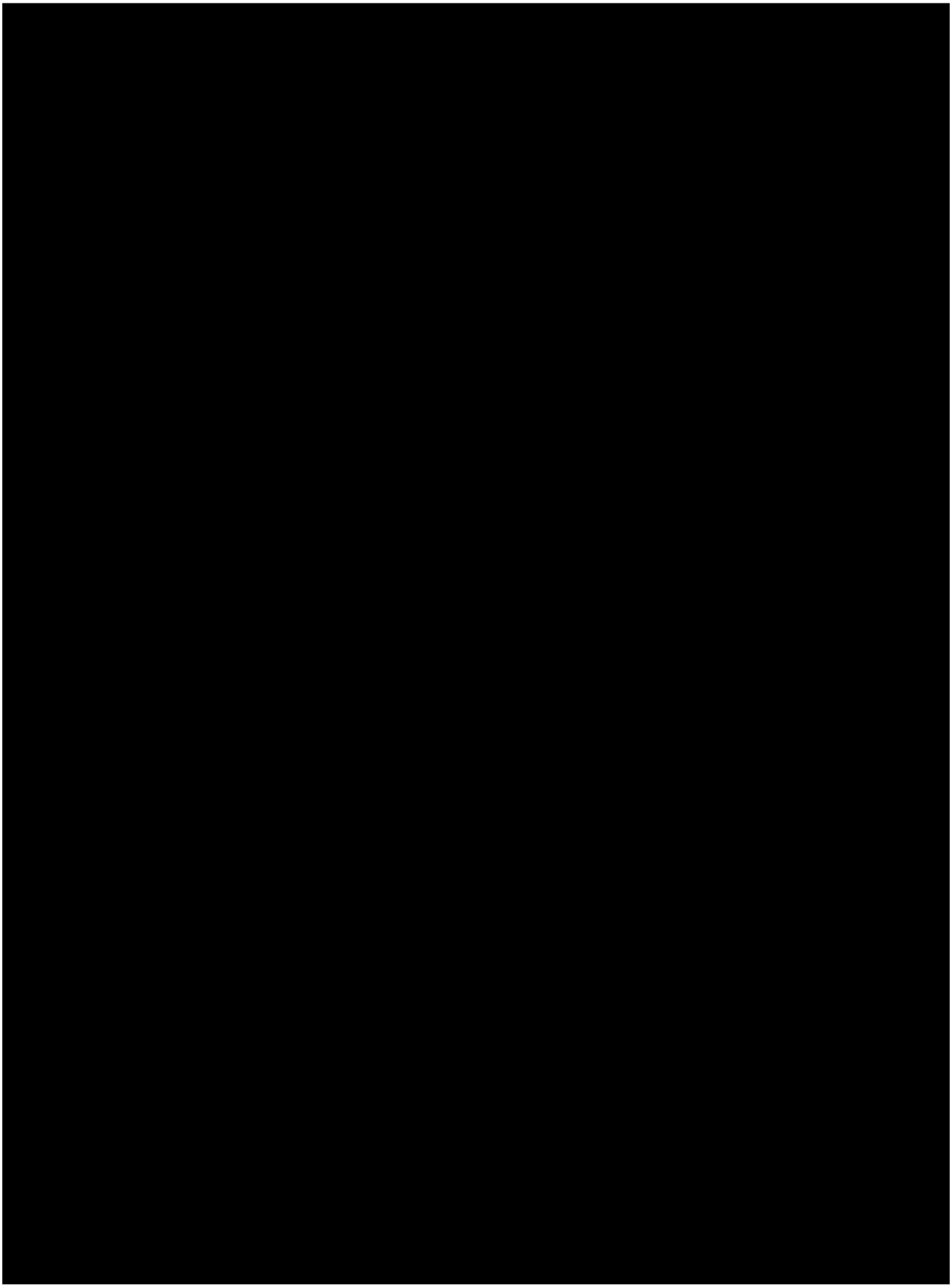


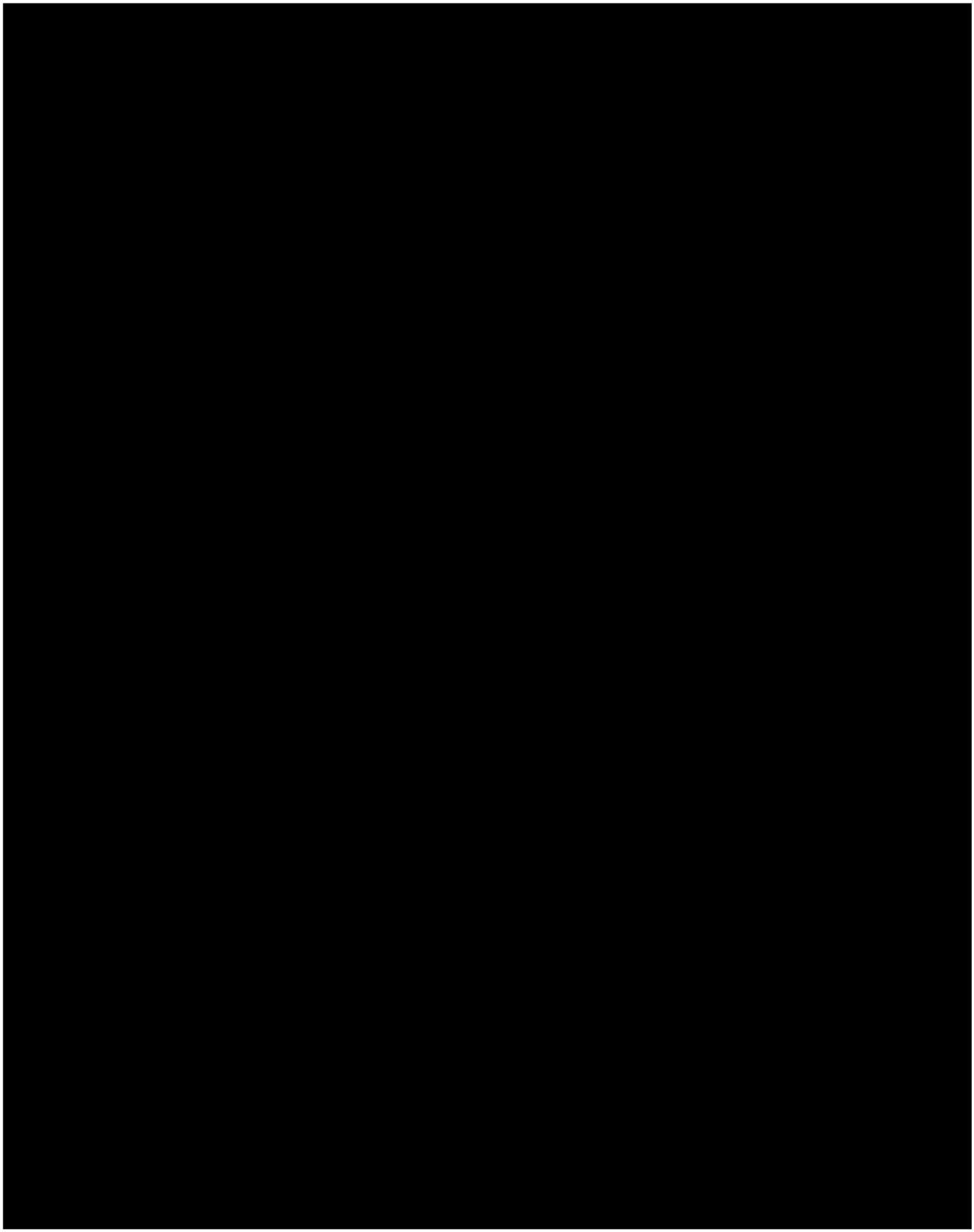




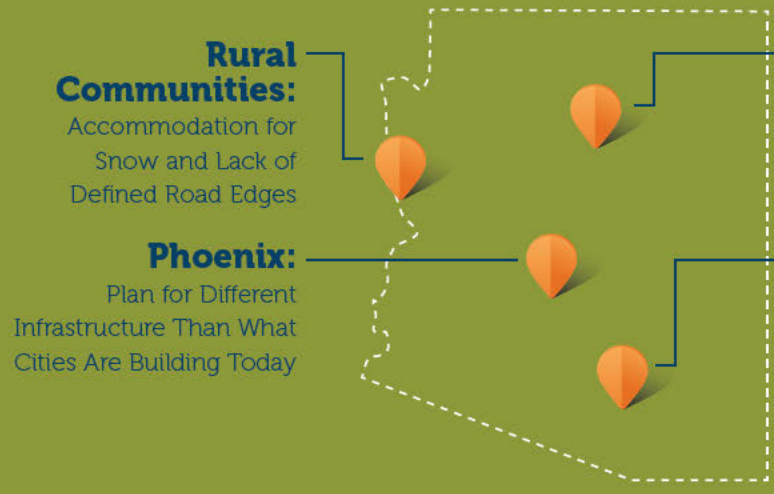
Tucson feels they have several attributes that create AV/CV opportunities and in the Phoenix metropolitan area AV/CVs have already been deployed through testing. Flagstaff does not expect their community to be early adopters.







STATEWIDE INFRASTRUCTURE CONCERNS

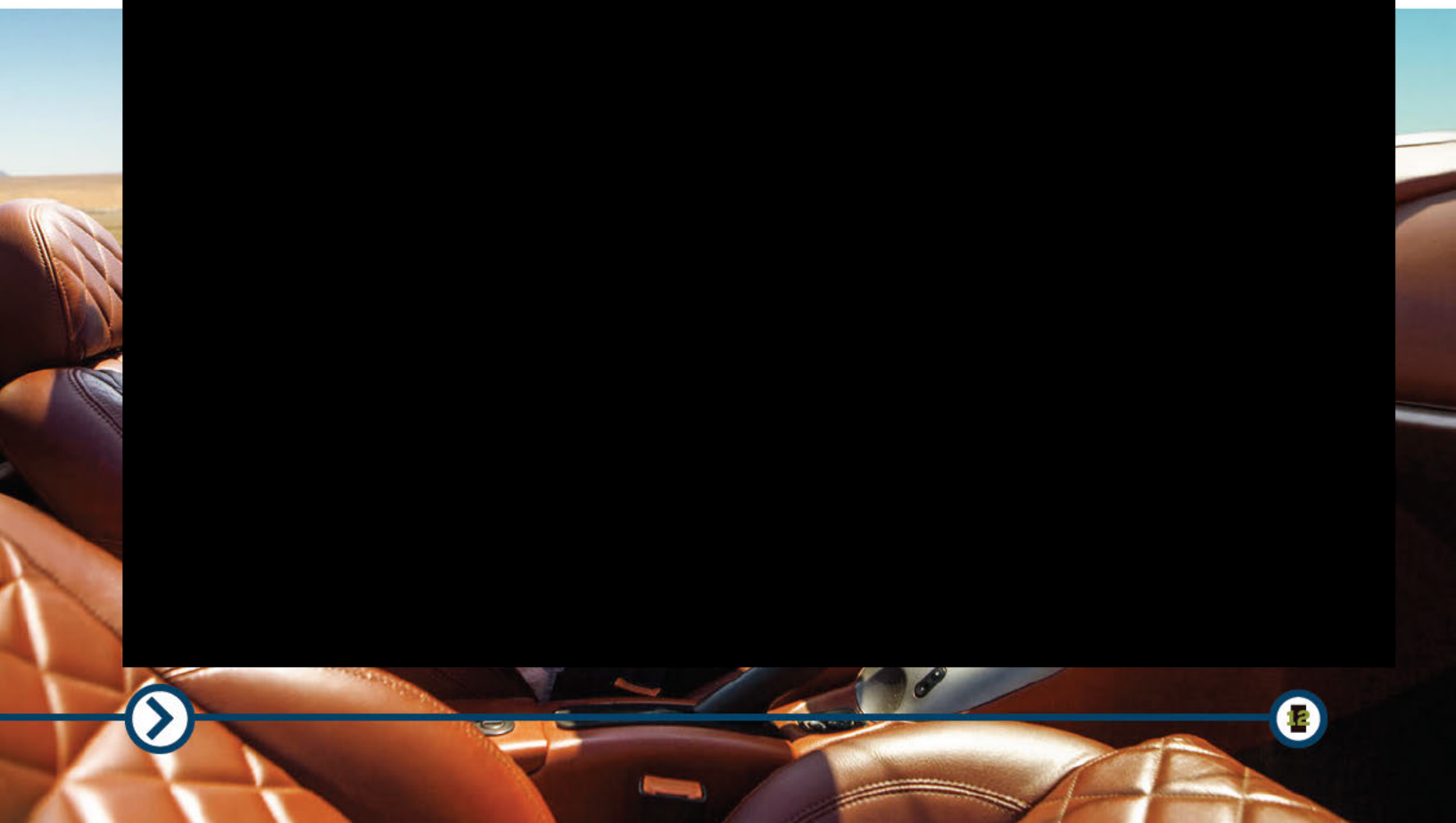


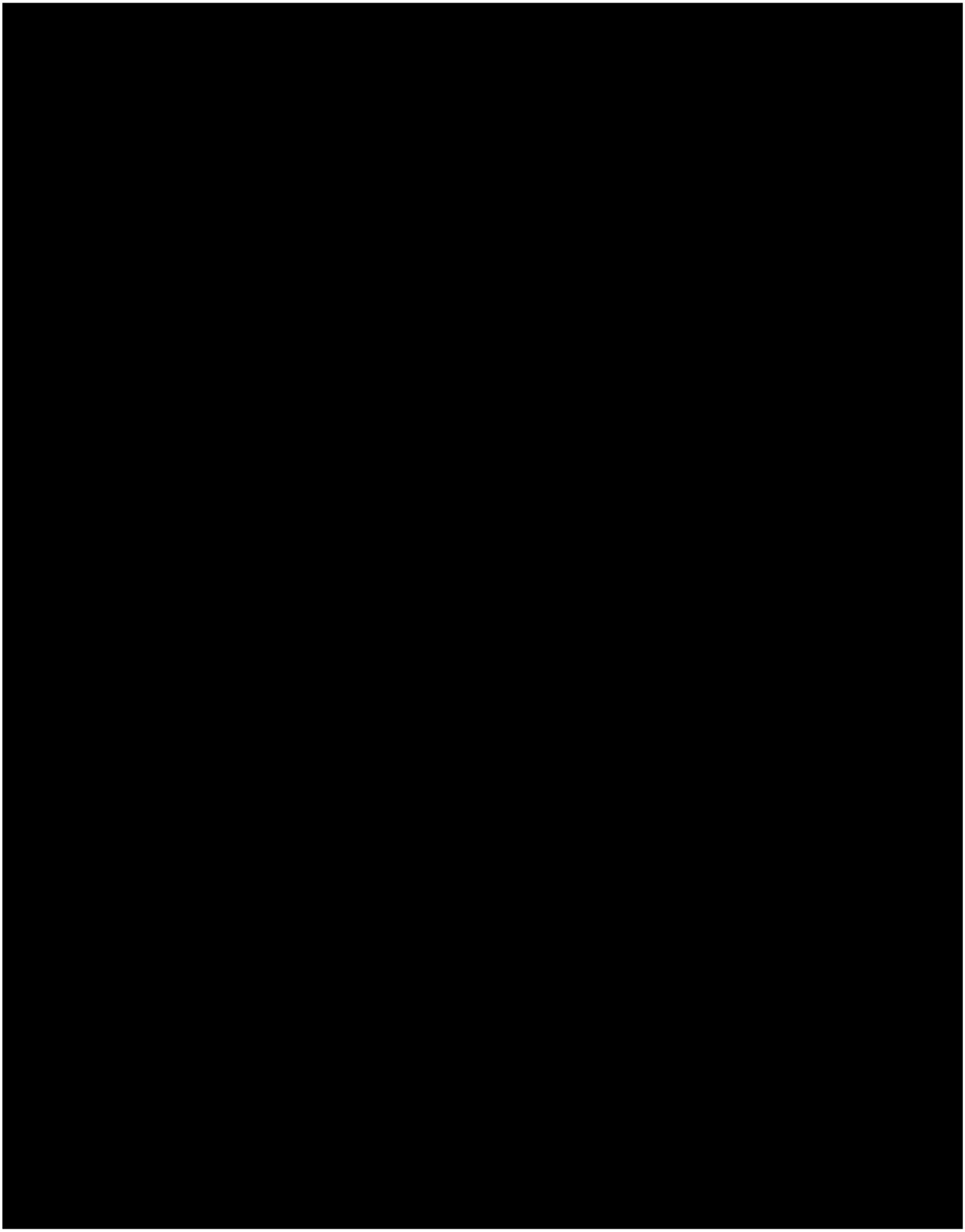
Rural Communities:
Accommodation for Snow and Lack of Defined Road Edges

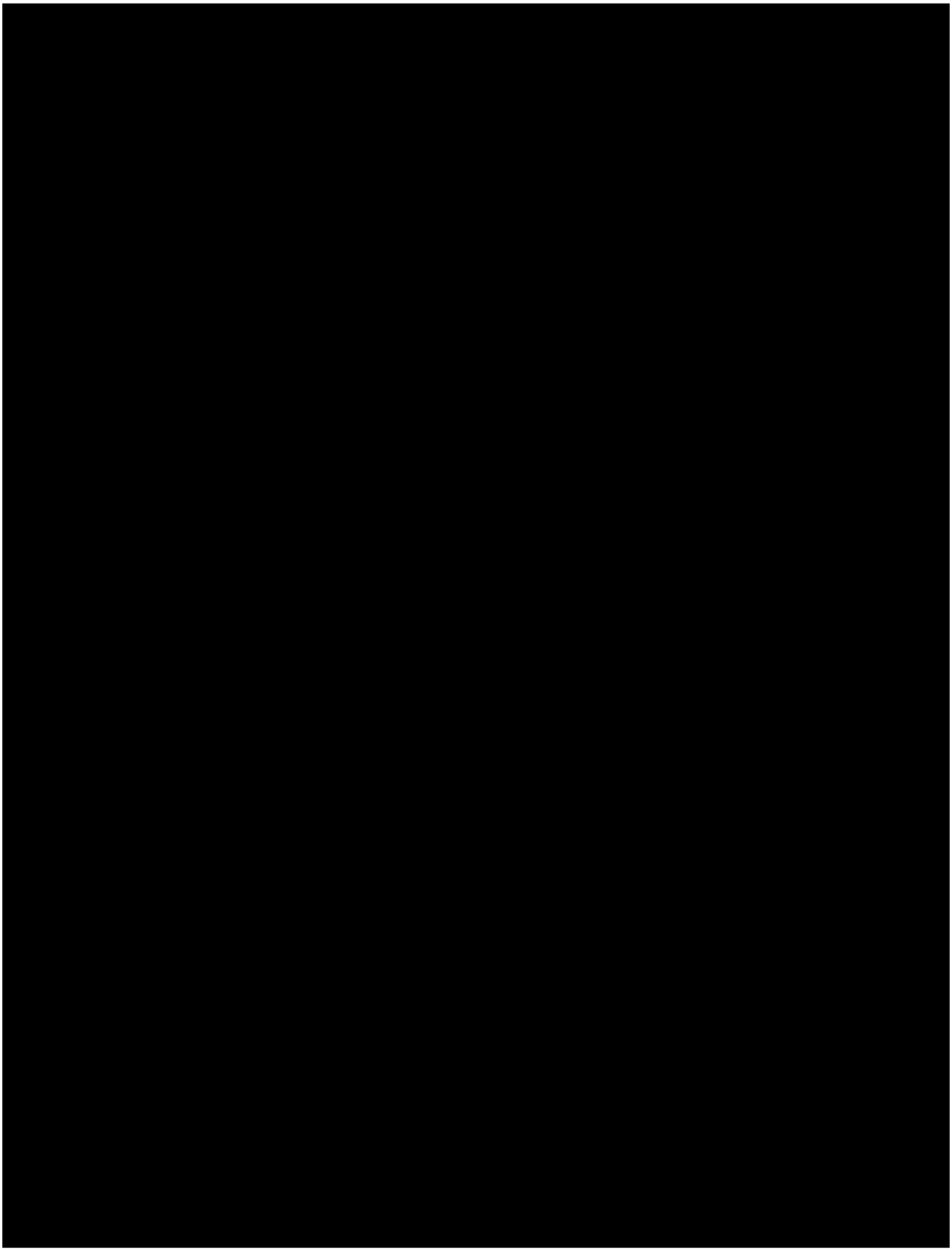
Flagstaff:
Build Public-Private Partnerships to Address Unknowns

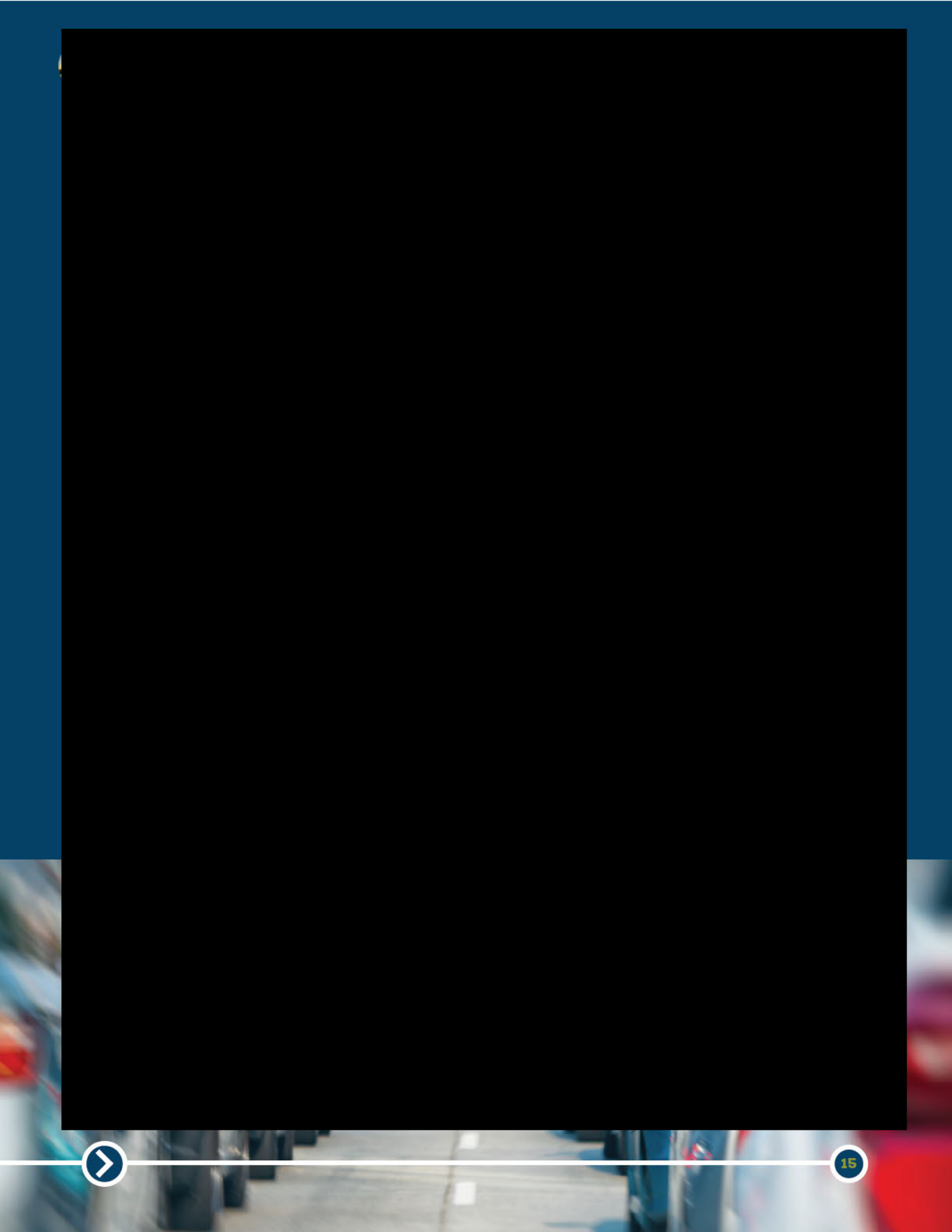
Phoenix:
Plan for Different Infrastructure Than What Cities Are Building Today

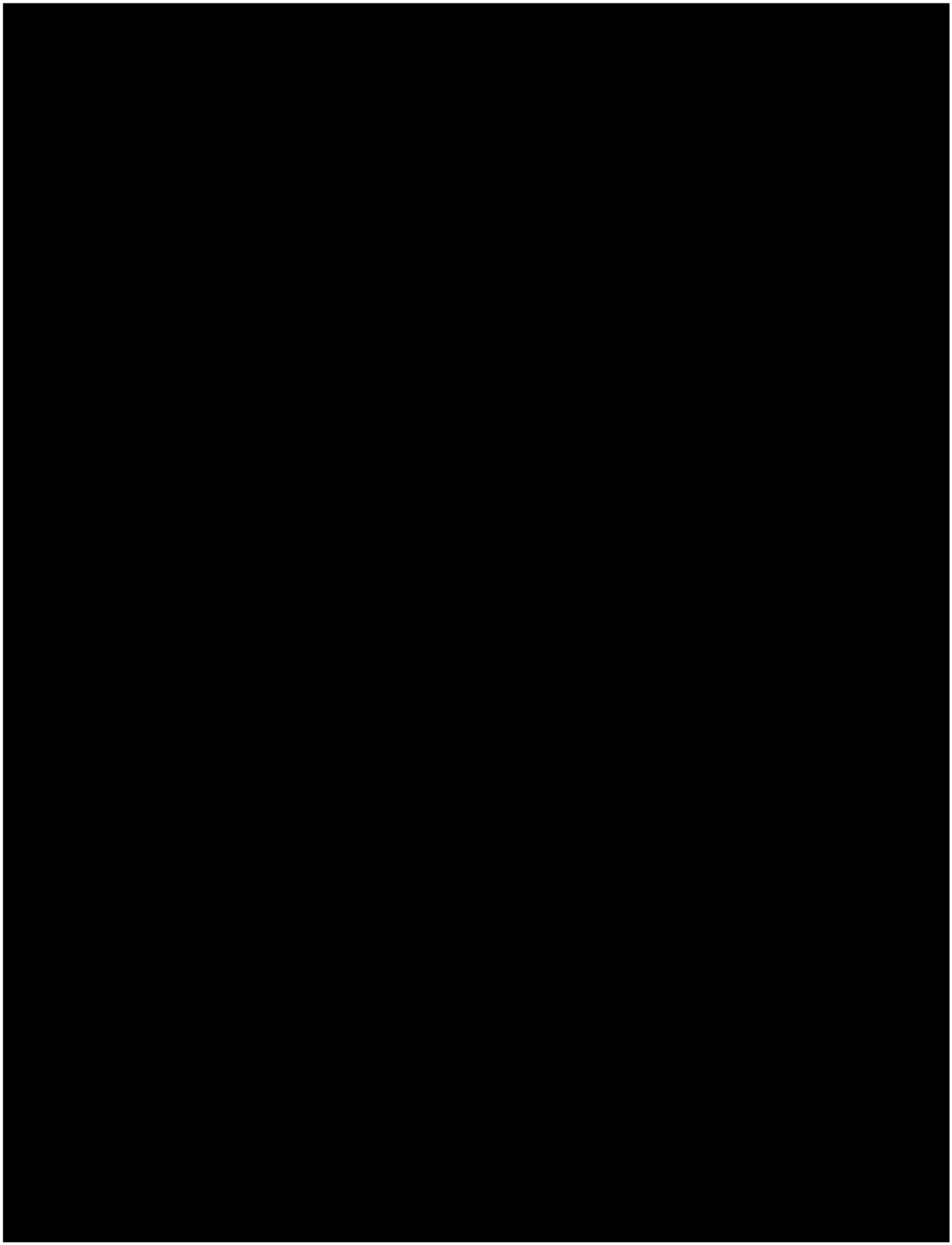
Tucson:
Corridor Planning and Building Smarter Technology Versus Larger Roads

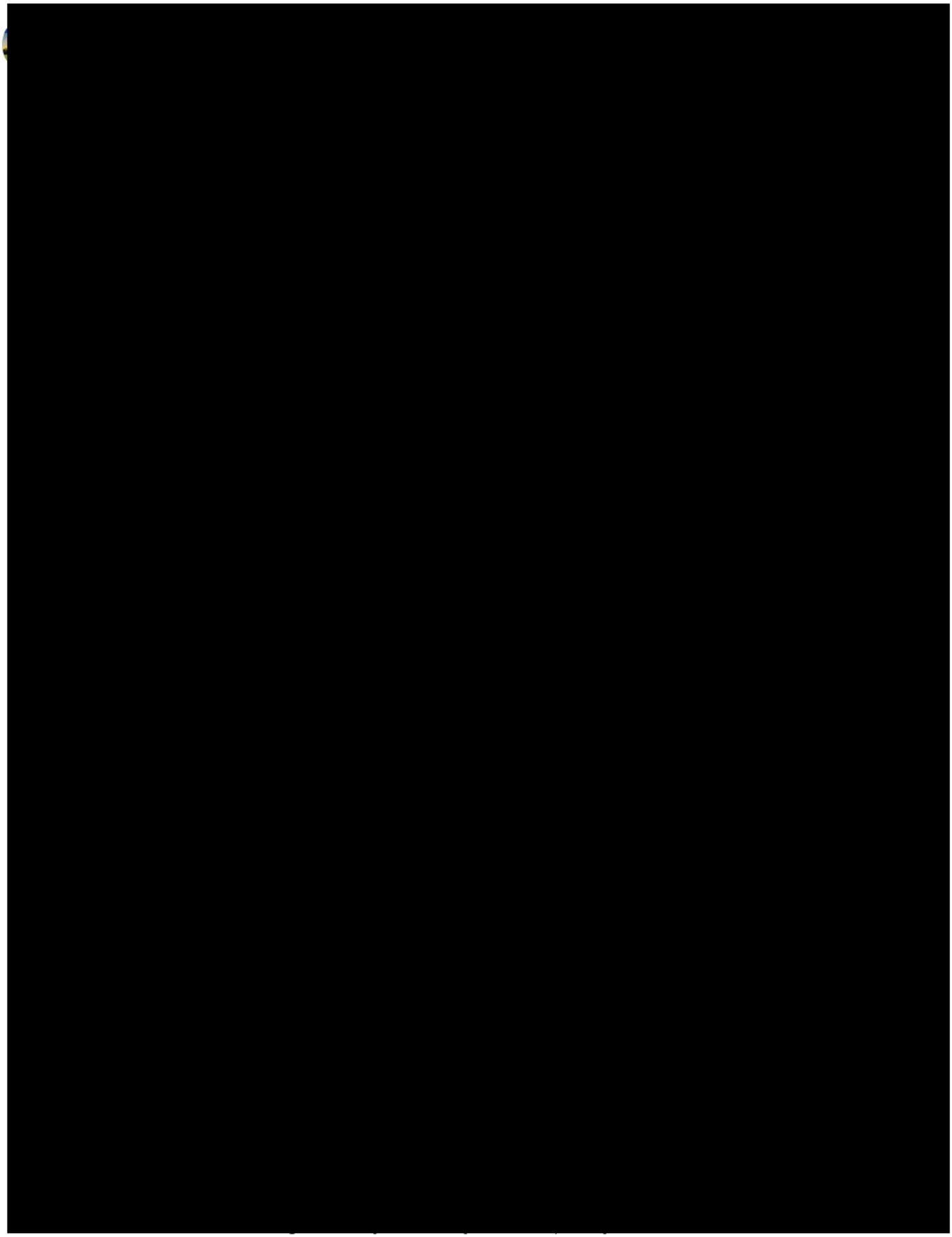


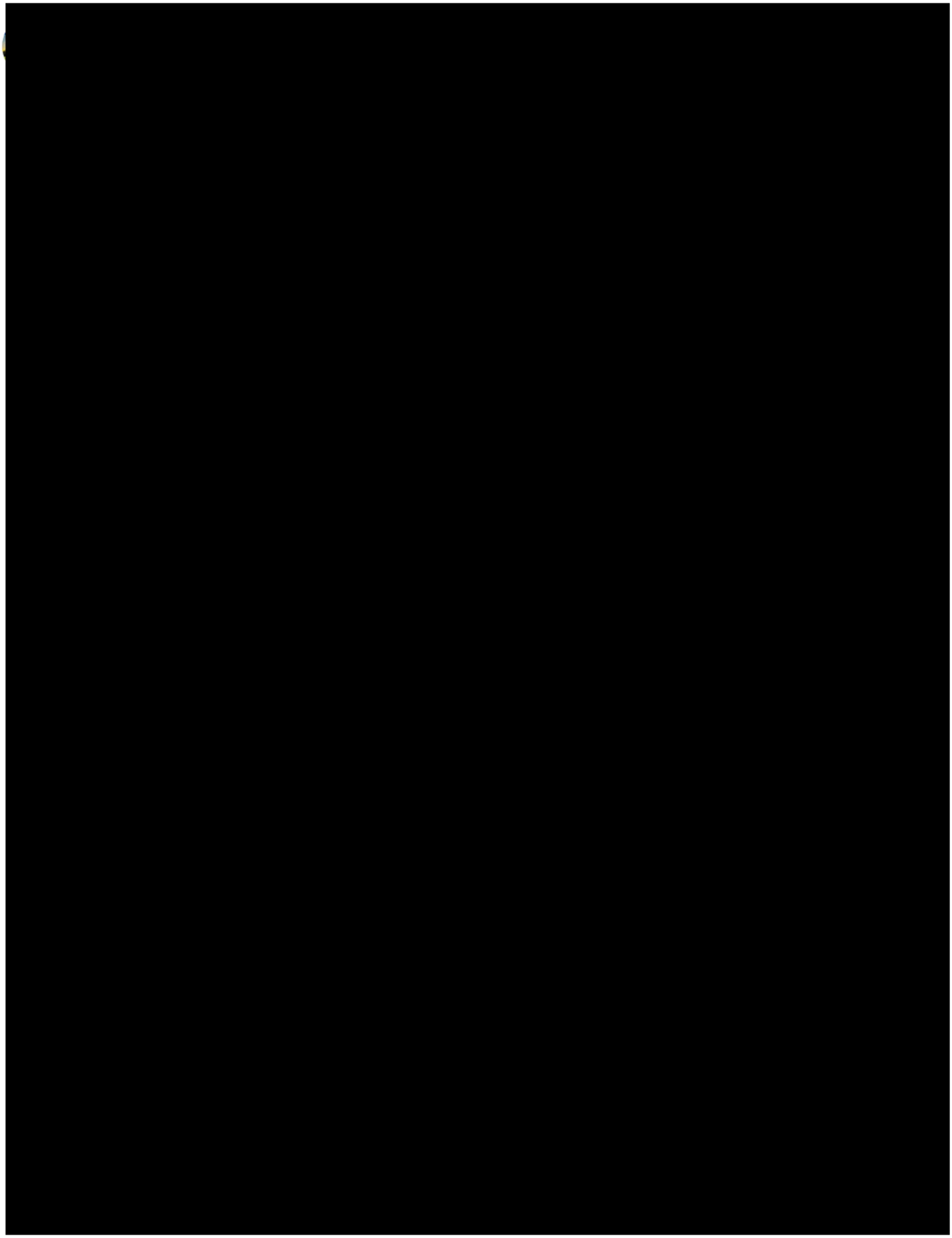












PARTICIPANTS

Town Hall Presentations and Industry Data

Eric Plapper
Program Manager, HDR

Veronica Siranosian
Vice President, AECOM

Greg Rodriguez
Mobility Policy Principal, Stantec

ARIZONA FORWARD TRANSPORTATION COMMITTEE

Involved with this white paper project

Jennifer Pyne
Deputy Director, Valley Metro

Lauren Evans
President, Pinyon Environmental, Inc.

Dave Skinner
Senior Vice President, HDR

Lori Singleton,
President and CEO, Arizona Forward

Tricia Covert
Director, Marketing and Public Relations Arizona Forward

Suresh Raghavendra
Program Manager, AECOM

Jason Simmers
Principal Engineer, Kittleson and Associates, Inc.

Dayna Wasley
Planner, AECOM

Ray Yparraquire
Senior Traffic Engineer, HDR

THANK YOU TO OUR TOWN HALL PARTICIPANTS

AARP Arizona

AECOM

APS

Arizona Commerce Authority

Arizona Community Foundation

Arizona Hispanic Chamber of Commerce

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Best Best & Krieger LLP

City of Apache Junction

City of Avondale

City of Chandler

City of Flagstaff

City of Mesa

City of Phoenix

City of Scottsdale

City of Surprise

City of Tucson

Chandler Chamber of Commerce

Cosanto Foundation

EEC

Federal Highways Association

Freeport-McMoRan

Greater Phoenix Economic Council

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Intel

Iteris

Kittelson & Associates, Inc.

Lake Havasu Metropolitan Planning Organization

Lloyd Construction Company, Inc.

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Northern Arizona Intergovernmental Public Transportation Authority

Northern Arizona University

Pima Association of Governments

Pima Community College

Pinyon Environmental, Inc.

Psomas

REDD, Inc.

Salt River Project

Town of Gilbert

Town of Marana

Town of Oro Valley

Transdev Services, Inc.

T. Y. Lin International

University of Arizona

Valley Metro

WSM Architects

XMotion

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ARIZONA FORWARD

Arizona Forward is an organization that has supported the state of Arizona for more than 50 years by advocating for major sustainability initiatives to create a balance of economic, environmental and community benefits. The organization has a membership reflecting diverse representation from government jurisdictions, large and small businesses, educational institutions and non-profit organizations. Arizona Forward is positioned to utilize its leveraging power and act as a catalyst to facilitate and execute projects that deliver improved and sustainable quality of life for the state.

From the inception of the organization, Arizona Forward has maintained a transportation committee focused on various initiatives throughout the years including the I-11 and the Central Arizona light rail system. Currently, the Mobility and Clean Air Solutions Committee is made up of more than 50 professionals involved in Arizona's mobility public and private sector.

arizonaforward.org