VINEYARD BICYCLE ADVISORY COMMITTEE
(B.A.C.) MEETING
Vineyard City Hall, 125 S Main Street, Vineyard, Utah
Tuesday, February 20, 2024, at 5:30 p.m.

PUBLIC NOTICE is hereby given that the Vineyard City Bicycle Advisory Committee will hold a regularly scheduled meeting at City Hall, 125 South Main Street, Vineyard, Utah. You can also view the meeting on our live stream channel.

1. **CALL TO ORDER –** Invocation/Inspirational Thoughts/Pledge of Allegiance
2. **OPEN SESSION**
   - Time dedicated for public comment. Comments will be limited to three (3) minutes. No actions may be taken by the Bicycle Advisory Committee due to the need for proper public noticing.

3. **WORK SESSION:**
   a. Vineyard Connectivity Analysis.
   b. Vineyard Beach Update

4. **BUSINESS ITEMS**
   a. **Appoint a Bicycle Advisory Committee Chair**
      - A Staff member will review the duties and responsibilities of Chair and Vice Chair
   b. **2024 Scheduled Meeting Calendar Approval**
   c. **Presentation of Bicycle Friendly Designation Award**
      - The League of American Bicyclists presented a designation to Vineyard City as a Bicycle Friendly Community. This Award is only presented to communities with impressive commitments to bicycling.

5. **OUTLOOK FOR B.A.C.**
   a. **Planning for 2024 Potential projects and events**
      - General discussions on potential projects and events the BAC can initiate or contribute to.
6. **COMMISSION MEMBERS' REPORTS AND EX PARTE DISCUSSION DISCLOSURE**

7. **ADJOURNMENT –** The Public is invited to participate in all Bicycle Advisory Committee meetings. In compliance with the Americans with Disabilities Act, individuals needing special accommodations during this public meeting should notify Anthony Fletcher, Planner, at least 24 hours prior to the meeting by calling (801) 226-1929 or email at anthonyf@vineyardutah.org.The foregoing notice and agenda were posted on the Utah Public Notice Website and Vineyard Website, posted at the Vineyard City Offices and City Hall, delivered electronically to city staff and each member of the B.A.C.

AGENDA NOTICING COMPLETED ON: February 16, 2024.
NOTICED BY: /s/ Anthony Fletcher
Anthony Fletcher, Planner

BikeUtah

November 2023

Vineyard Connectivity Analysis

Created for the City of Vineyard by, Bike Utah

Allison Padgen

Cameron Carter

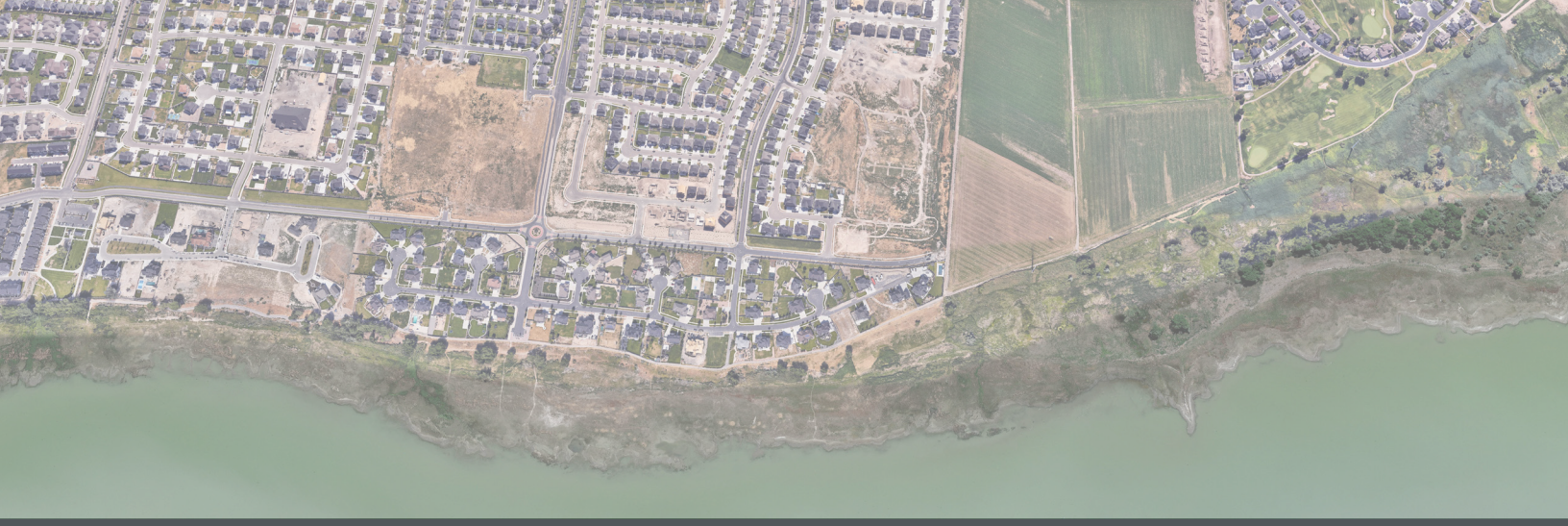
Chris Wiltsie

INTRODUCTION

This connectivity analysis explores the completeness of Vineyard's Active Transportation network for all users and abilities. This study will consider the relative level of connection, the density of the network, and the ability of users to connect origins to destinations.

Primarily, this analysis focuses on the connectivity of the cycling network. Understanding street and crossing safety is essential to understanding how connected the cycling network is.

Unsafe roads and crossings create barriers to cycling and often segment the community. The percentage of the cycling community that is comfortable riding on busy, fast-moving streets is generally small. Thus, this analysis looks at the network from the needs of all users with an emphasis on children. These analyses and methods were adapted from the 'Utah Street Connectivity Guide' by the WFRC and the Department of Transportation's 'FHWA Multimodal Network Connectivity Guide.'



EXECUTIVE SUMMARY

Part 1 - Barriers To Active Transportation

This section identifies areas within the network that hinder the utilization of the Active Transportation (AT) network in connecting residents to key facilities. Uncovering these barriers is crucial for enhancing accessibility and promoting efficient mobility within Vineyard.

Part 2 - Connectivity Index

An in-depth exploration of Vineyard's current road network is conducted in this segment, utilizing established metrics to assess and comprehend the existing level of connectivity. This analysis serves as a foundation for understanding the network's strengths and weaknesses.

Part 3 - Ability to Connect Origins to Destinations

Employing travel sheds, this section gauges the level of connection between origins and vital destinations. It assesses the network's ability to efficiently link residents to essential destinations, encompassing everything from food to entertainment. This insight is pivotal for fostering a well-connected community.

Part 4 - Facility Recommendations

Providing actionable solutions, this section furnishes facility and policy recommendations addressing issues identified in Parts 1, 2, and 3. The proposed recommendations aim to elevate the quality of the AT network for cyclists, ensuring a more seamless and efficient experience for all residents of any age and ability.

PART 1 - BARRIERS TO CYCLING

Roads

The safety of active transportation infrastructure is paramount. Safe networks should minimize collision risk by separating paths and reducing conflict points wherever necessary, in particular surrounding schools, as providing safe routes for kids is a main priority. The parameters for the intensity of cycling infrastructure are detailed in the figure below and represent best practices outlined by the Federal Highway Administration (FHWA).

All roads that don't have the relevant contextual bike infrastructure are listed as barrier roads in the table below. These parameters are not only about safety but also highlight the need for comfortable, attractive routes. Taking these factors into account bolsters the use of active transportation infrastructure. It can help us understand why a painted bike lane on a busy street isn't being used and, therefore, isn't bolstering the connectivity.

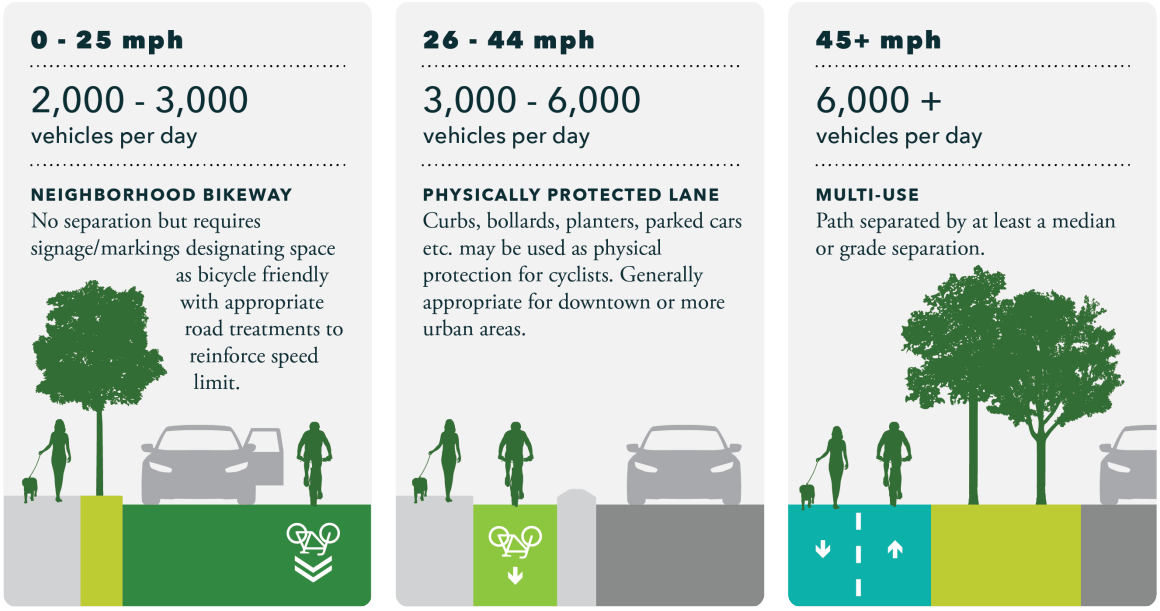


Table 1: Barriers To Cycling

Road Name	Speed (mph)	Current AT facilities	AADT (2017)	Meets Safety Guidelines (Y/N)
s 200 W	40	None	N/a	N
N Geneva Rd	45	Painted bike land (both sides)	19,000	N
Vineyard connector Rd	40	Shoulder	1,101	N
Main St (150 N - Center St)	35	Marked shared roadway	N/A	N
Center St (N Main St - N Vineyard Rd)	35	Marked shared roadway	500	N
S Vineyard Rd (center St - S Cortona Ln)	35	None	N/A	N
E Vineyard Rd	35	None	N/A	N
W 400 S	30	None	N/A	N
N Mill Rd	35	Painted bike land	N/A	N

Crossings

Another essential factor is safe crossings. Street crossings are a main collision risk between pedestrians and vehicles. The table below lists the appropriate crossing types on roads with higher speed limits, Annual Average Daily Traffic (AADT), and large width.

Using these parameters by the WFRC 'Street Connectivity Guide' all of the crossings in Vineyard were analyzed; the ones that didn't have the corresponding infrastructure, such as signalized crossings on roads of 35 mph or above, which included the majority of intersections on Vineyard Connector Rd, Vineyard Loop Rd, Vineyard Rd, and Center St are listed in Table 2 below.

Barrier	Minimum across-barrier connection required
None: 25 mph or lower and two lanes or fewer	None required
Class I: Over 25 mph speed limit and/or three lanes of more	Marked crosswalk
Class II: Two or three are true: 35 mph or higher speed limit; five lanes or more; 20,000 (AADT)	Signalized crossing

WFRC Utah Steet Connectivity Guide, 2017

All the listed crossing barriers significantly increase travel time, reduce directness, and effectively divide the community. In some instances, they impede pedestrians from accessing key separated pathways, which ultimately diminishes the overall connectivity of the AT network.

Table 2: Barriers To Crossings

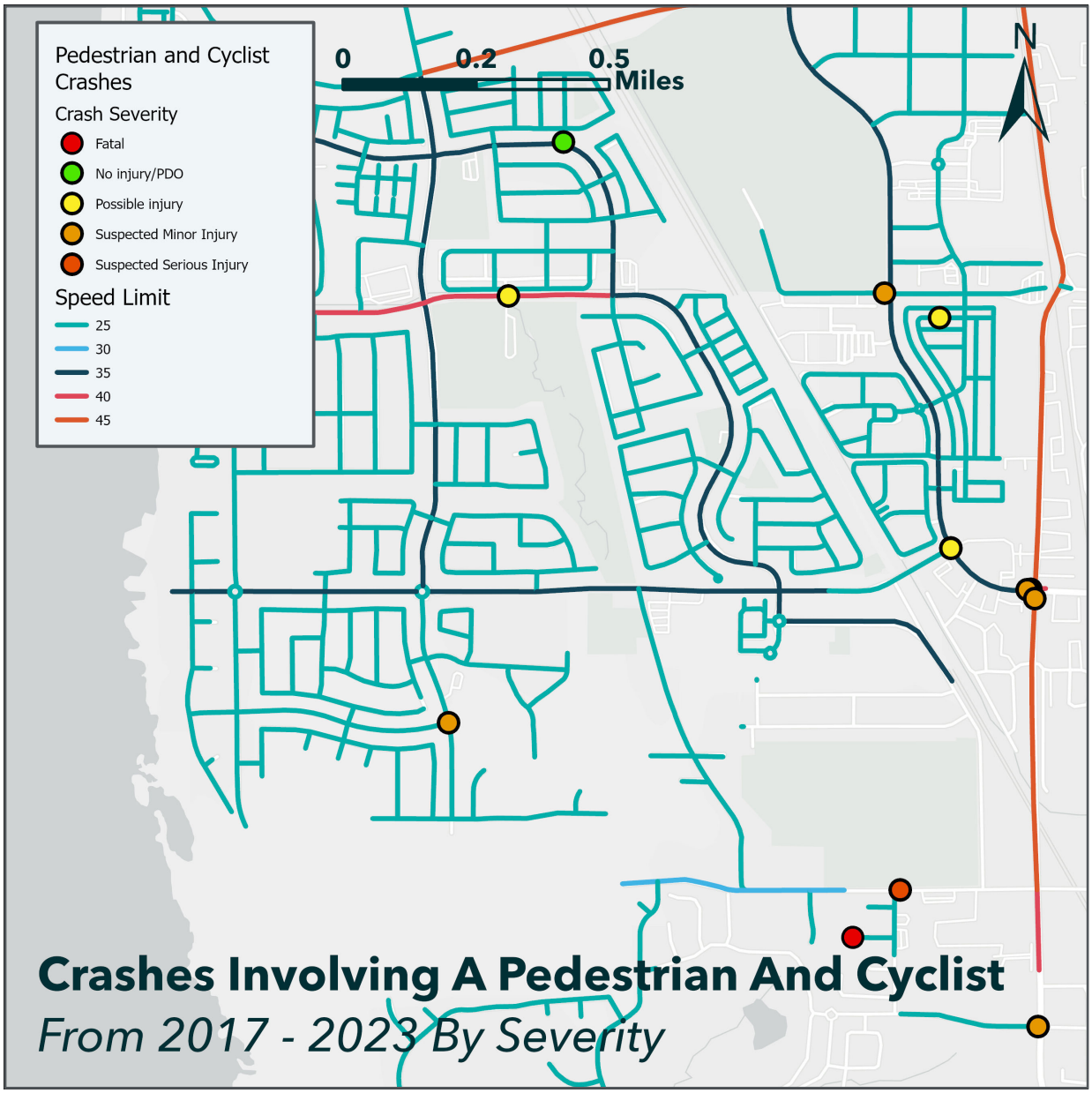
Street name	Crossing	Speed Limit
Vineyard Connector Rd	Mill Rd (N-S), Main St (N-S)	45 mph
Vineyard Loop Rd	N 300 W (N-S), 260 W (N-S), Fall Creek Dr (N-S), N Preserve Dr (N-S), N Aspen Springs Dr (N-S), N Main st (N-S, E-W), N 100 st E (N-S), N 190 E (N-S), 560 N (E-W), E 510 N (N-S), E 460 N (E-W), E 400 N (N-S, E-W)	35 mph
Vineyard Rd	N 300 W (N-S), N Pintail Ln (N-S), N 150 W (N-S), N 100 W (N-S)	35 - 40 mph
Center St	S Sunset Dr (N-S), N 300 W (N-S), S Sicily Way (N-S), Main St (N-S) S Holdaway Rd (N-S), N Vineyard Rd (N-S)	35 mph

Safety

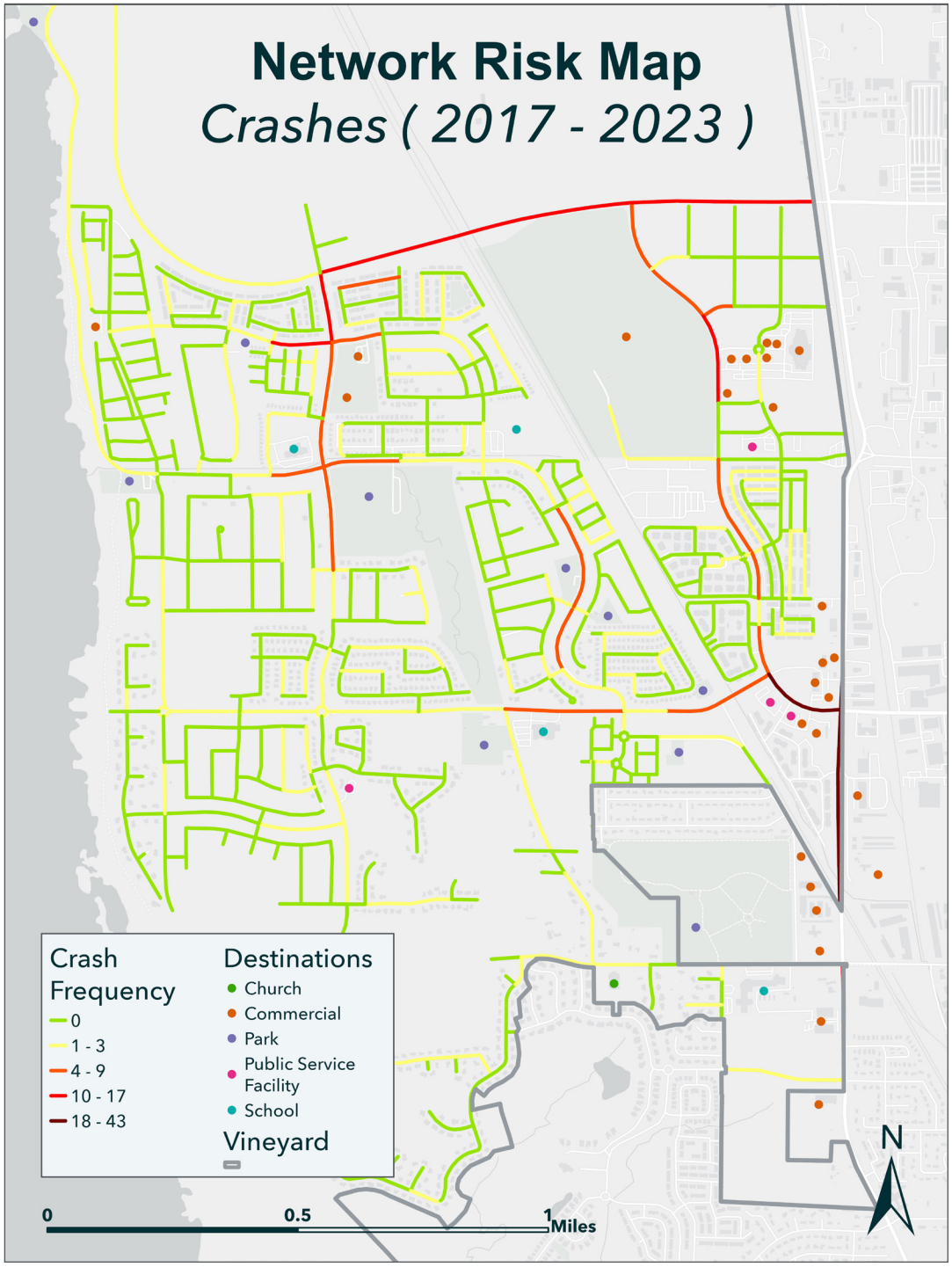
The maps in this section visually represent the risks tied to high-speed roads and intersections, which have been the primary locations of pedestrian-involved crashes. The map on the next page employs crash data from 2017 to 2023, categorizing incidents by road segments to create a network map highlighting road segments with a higher frequency of crashes.

This Network risk map, illustrates areas that are, by extension, more dangerous to vulnerable road users like pedestrians and cyclists, highlighting the areas where safety improvements are most urgently needed. By addressing these high-risk segments, Vineyard will be a safer and more inviting environment for active transportation users.

In the map below, only crashes involving cyclists or pedestrians are visualized, highlighting the hazards at intersections, where the majority of these accidents occur, underscoring the significance of establishing safe crossings.



Map 1: The crash map uses data from 2017 to 2023 from Aashtoware Safety to plot where pedestrians and cyclists have been hit by cars in Vineyard.



Map 2: The network risk map uses crash data from 2017 to 2023 from Aashtoware Safety. The frequency of crashes for road segments is analyzed to identify roads with a higher frequency of crashes and, therefore, risk within the network. This data uses car and pedestrian crashes.

FINDINGS: IDENTIFICATION OF 8 HAZARDOUS ROADS AND 28 CROSSINGS HIGHLIGHTS BARRIERS IN THE AT NETWORK, SIGNIFICANTLY IMPACTING THE ABILITY TO CYCLE SAFELY AND COMFORTABLY IN VINEYARD.

PART 2 - CONNECTIVITY INDEX

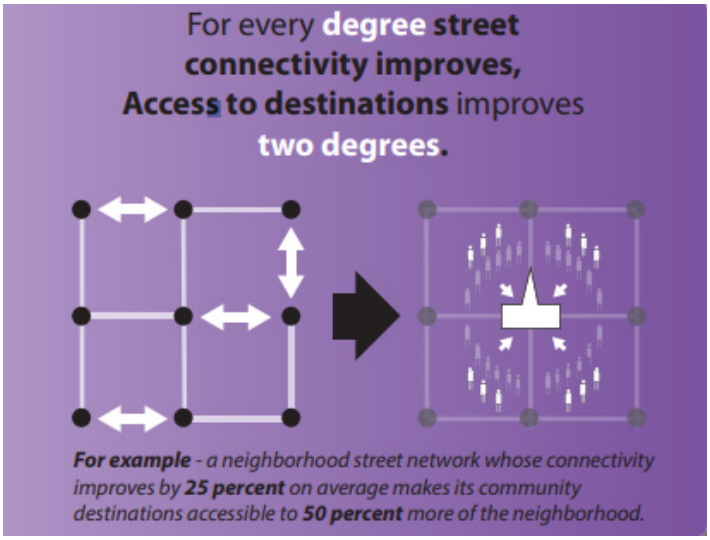
Connectivty, Four Key Metrics:

1. Connectivity Index: Calculated by dividing the total number of street segments (links) by the number of intersections (nodes) to determine the area's relative level of connection.

2. Network Density: Measured as intersections per square mile within the study area, indicating the density of the street network.

3. Travel-sheds: Used to analyze the ability to connect origins to destinations. These delineate the safe and comfortable area that can be reached within a specified distance using the existing multimodal network, excluding unsafe roads and crossings.

4. Block Length: Examines the five average longest gaps between pedestrian links.



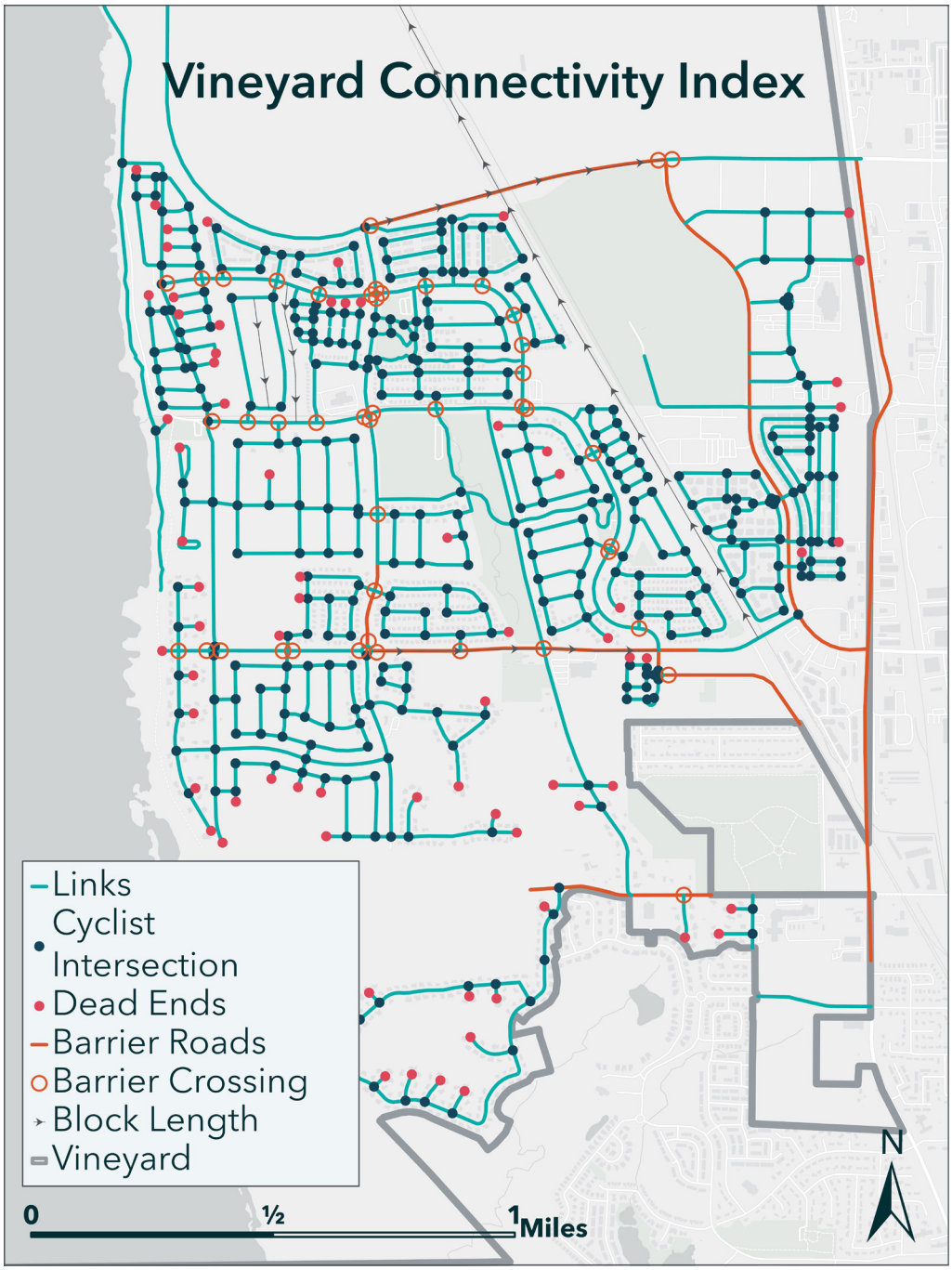
WFRC Utah Steet Connectivity Guide, 2017

The map on page 8 illustrates the links and nodes in Vineyard, excluding streets and intersections listed in Tables 1 and 2. It's worth noting that factors such as large plot sizes, dead-end streets, and cul-de-sacs can hinder connectivity by creating longer, less direct routes, while grid layouts enhance connectivity with shorter block lengths and more intersections per street segment.

Metrics have been calculated and are presented in the table below. Compared to the WFRC standards for suburban areas, the connectivity index stands at 77.8% of the standard. This deviation can be attributed to the heavy use of cul-de-sacs, substantial block sizes, barrier roads, and a lack of signalized crossings. Evidence of this can be seen from the block lengths, measuring 3,240 ft longer on average than the standard for Suburban communities.

Table 3: Connectivty Results

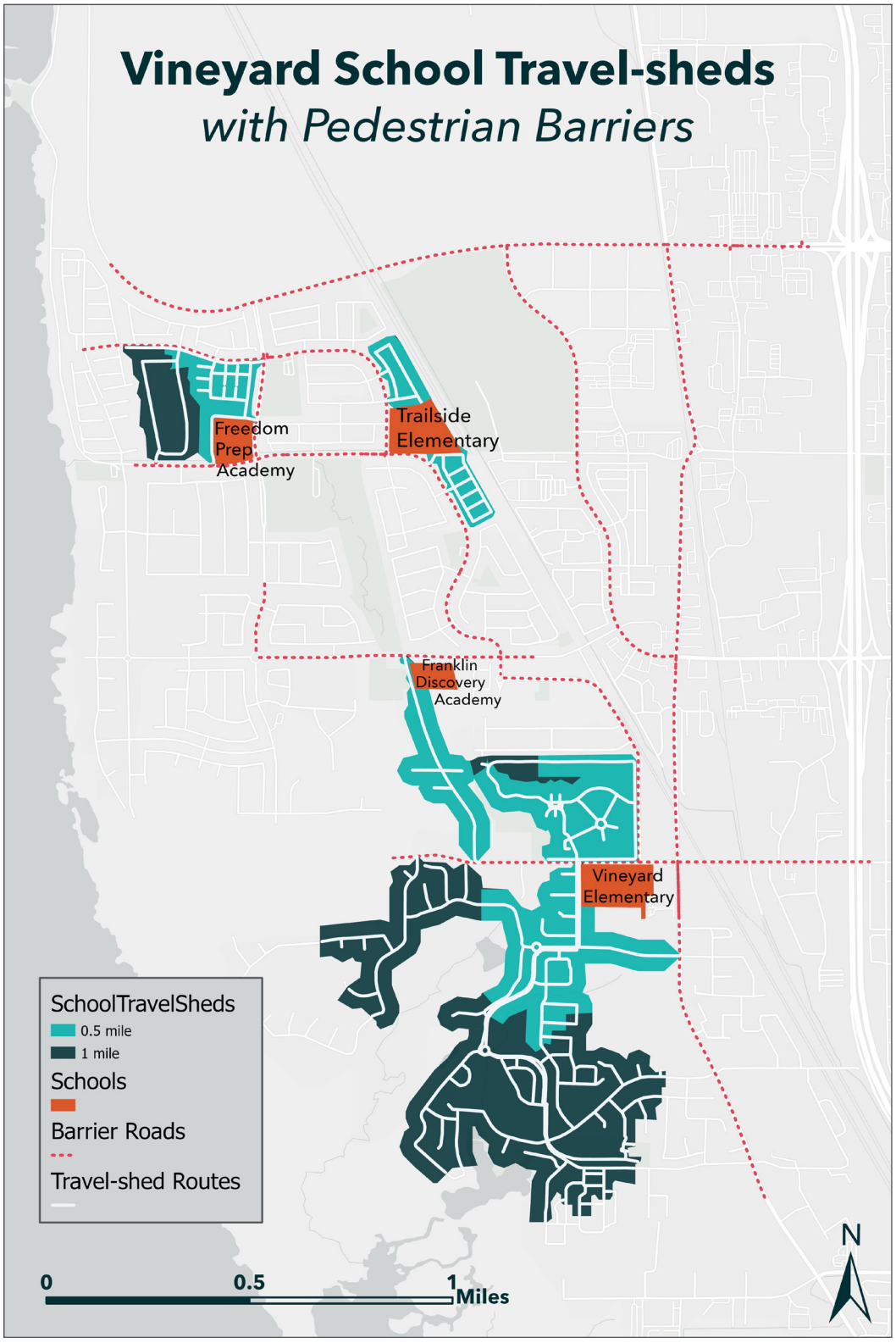
Meric	Vineyard	Standard	Percent of Stan dard
Netw -ork Density	2 intersections per square mile	5 intersections per square mile	40%
Conne- ctivity Index	1.4	1.8	77.8%
Block lengh	4,240 ft	1,000 ft	24%



Map 3 : This map was created using UGRC's road centerline with updated speed-limit data and the Multimodal network dataset. The map depicts the links and nodes, Network Density, and five average longest links between safe pedestrian links (block lengths), barrier roads, and crossings.

FINDINGS : VINEYARD'S CONNECTIVITY INDEX IS 22% BELOW THE STANDARD FOR SIMILAR SUBURBAN TYPOLOGIES, MAINLY DUE TO LONG BLOCK LENGTHS, EXCESSIVE CUL-DE-SACS, BARRIER STREETS AND CROSSINGS, WHICH ALL RESULT IN A SUBSTANTIAL REDUCTION IN THE OVERALL CONNECTIVITY.

PART 3 - CONNECTING ORIGINS AND DESTINATIONS



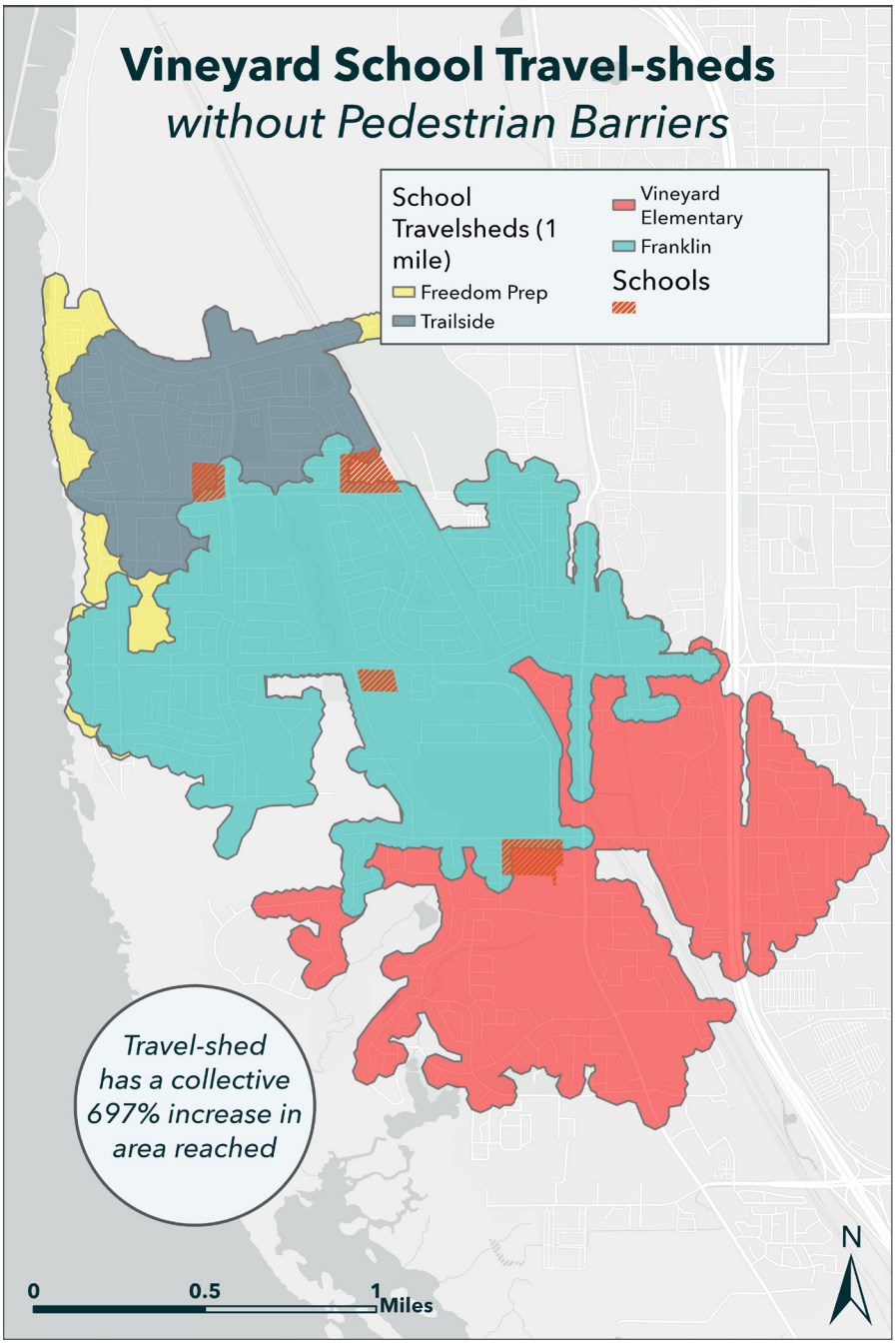
Map 4: This map depicts the area that can be reached from the schools within 1 mile of Vineyard using the current cycling network using the Multimodal network Dataset from the UGRC.

School Accessibility:

Travel-sheds measure the accessibility of essential destinations in Vineyard. To promote the use of the AT network, it's crucial to ensure people can access their desired locations within a reasonable distance via direct, comfortable, and secure routes. For people to utilize the AT network effectively, they must have a variety of destinations to travel to.

First, access to schools in Vineyard is measured on page 10 by outlining a 1-mile distance (using the cyclist network) from Vineyard schools: Freedom Academy, Trailside Elementary, Franklin Discovery Academy, and Vineyard Elementary.

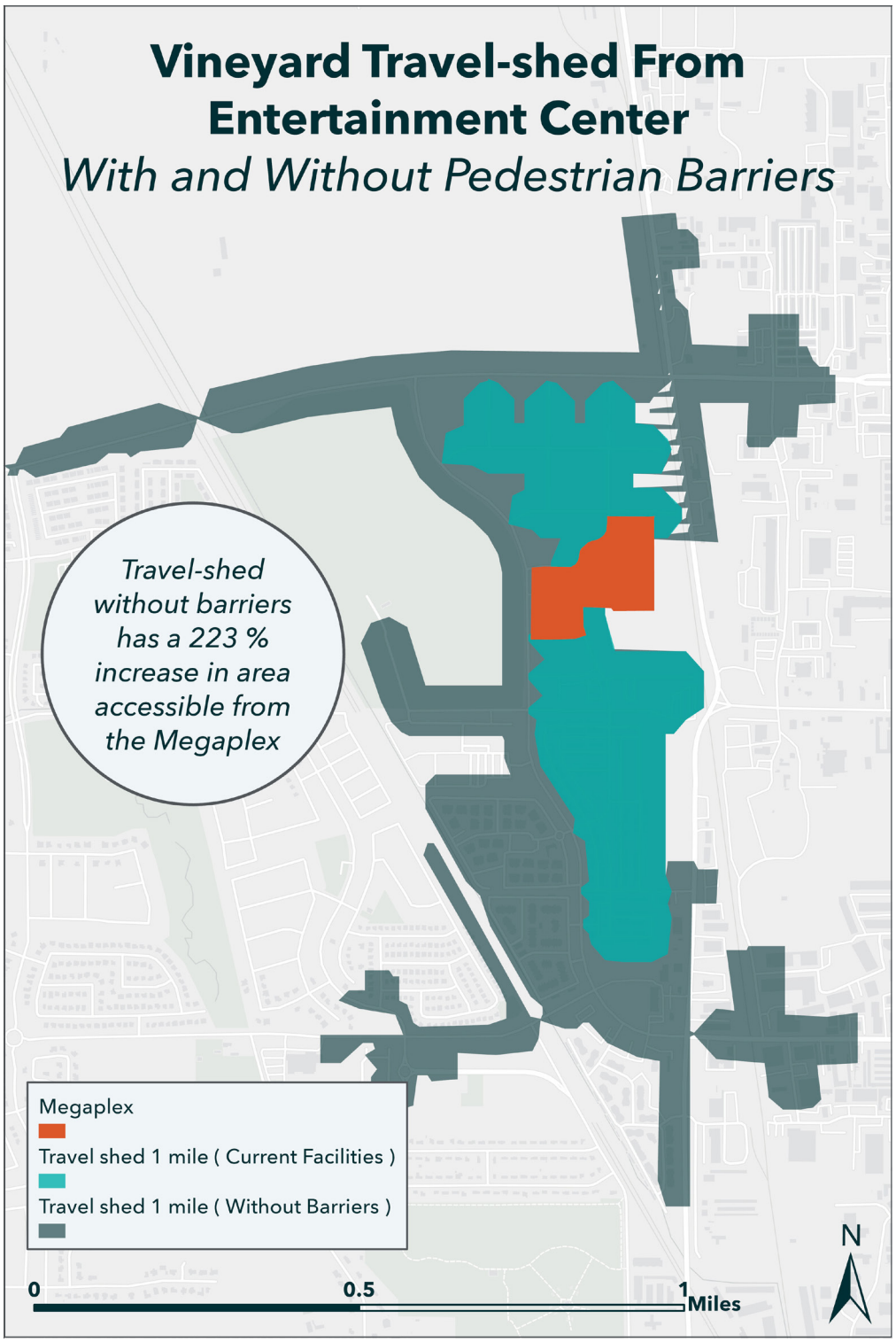
All schools are constrained by barrier roads and crossings, isolating them from the broader Vineyard area. In certain instances, such as Freedom Prep, there is a lack of safe crossing options to connect to the multi-use paths on the south side of Vineyard Road, while there is great infrastructure, there isn't a safe and comfortable way to access it from the school. In general, along the barrier streets listed in Table 1, there is a notable absence of eligible crossings to link these valuable pathways already in place. The map below illustrates the expanded area accessible within a 1-mile radius when barriers in the network are eliminated.



Map 5: The UGRC's multimodal network dataset is used to compute the area reached within one mile from the schools in Vineyard without any barrier streets, showing the impressive increase of area reached within 1 mile with improved cycling facilities.

Commerce Accessibility:

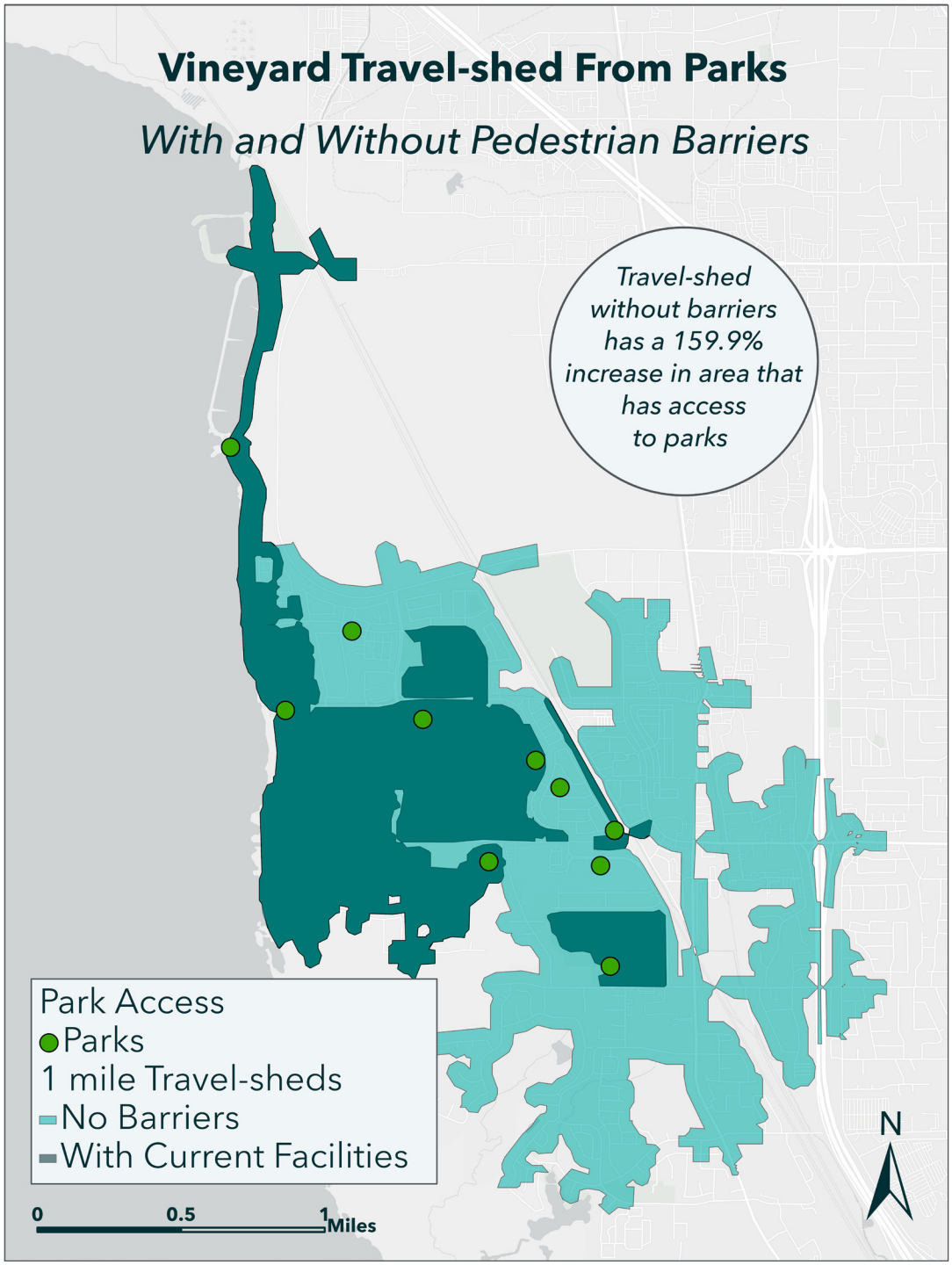
The map below focuses on connectivity to a central destination hub for commercial goods, entertainment, and dining. It highlights the limited access to this hub of attractions. While the increase in travel without barriers results in a 223% improvement, additional efforts are needed to establish competitive, direct cycling routes connecting this hub to the rest of Vineyard, where most residents reside.



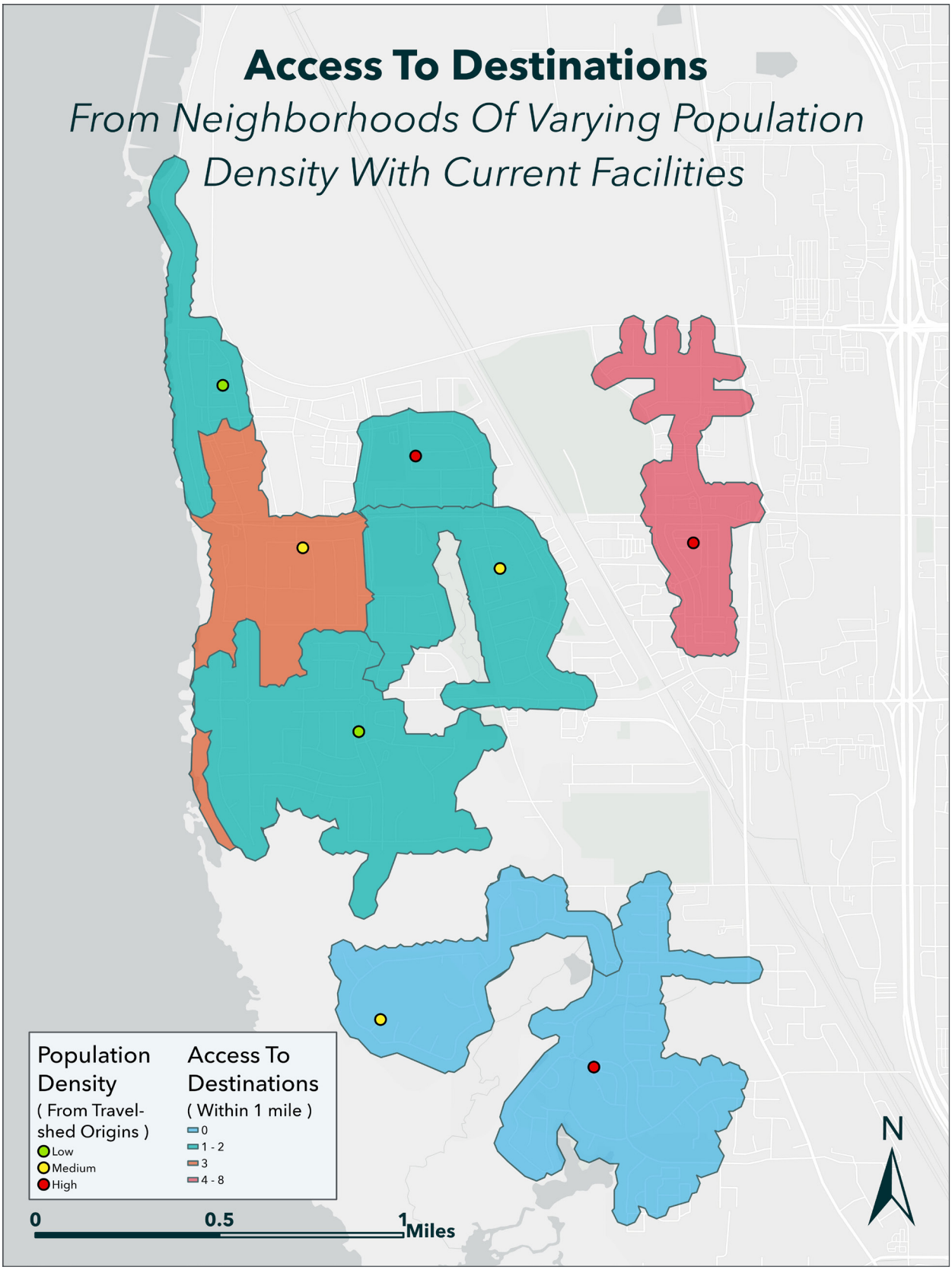
Map 6: Delineates a 1-mile area that can be reached using the pedestrian network with and without pedestrian barriers from the entertainment center, demonstrating the low connectivity to this area.

Green Space Accessibility:

Green spaces are another important destination, as the ability to access these spaces increases the health and happiness of residents. Vineyard boasts a remarkable distribution of parks and open spaces; however, the barrier roads and crossings impede access, as depicted in the map below. It contrasts travel-sheds for park access with and without these barriers, revealing a remarkable 159% expansion in the area that can easily access these green spaces. This directly enhances the number of residents who can conveniently reach these vital destinations.



Map 7: Delineates a 1-mile area that can reach various parks using the pedestrian network with and without pedestrian barriers



Map 8: Depicts the ability to connect origins and destinations with the current cycling network from areas of varying population density. The greater the access to destinations, the better the connectivity for that neighborhood, which is delineated using census data blocks from 2020.

Ability To Connect To Multiple Destinations:

In addition to evaluating safe and convenient access to key destinations in Vineyard, the map on page 13 explores another critical aspect: connecting neighborhoods to a range of destinations. It's imperative to establish links between residential areas and diverse points of interest, as even with a robust AT network, people require places to travel to. A well-connected area should provide access to a variety of destination types, such as dining, places of worship, green spaces, and public service facilities.

By utilizing 2020 census data, the map identifies census blocks with varying population densities and creates 1-mile travel sheds from these areas. These sheds are color-coded to represent the number of destinations accessible via the multimodal cycling network. This map highlights the challenge of connecting to a diverse range of destinations. A primary reason for this challenge is the railroad's division, which separates the commercial hub and the majority of Vineyard's population to the west of the tracks. Additionally, the absence of infrastructure on the busier roads hampers the establishment of crucial connections to this central commercial destination.

FINDINGS : REDUCED CONNECTIVITY AND BARRIERS, ESPECIALLY ROADS AND CROSSINGS, IMPEDE ACCESS TO KEY DESTINATIONS, NOTABLY DINING AND ENTERTAINMENT, WHICH ARE SEPARATED BY TRAIN TRACKS AND A LACK OF INFRASTRUCTURE ON KEY LINKING STREETS. ADDRESSING THESE ISSUES IS VITAL FOR ENHANCING ACCESSIBILITY FOR ACTIVE TRANSPORTATION USERS.

PART 4 - FACILITY RECOMMENDATIONS

Summary Of Findings:

Part 1: Barriers to Active Transportation

Problem: Barrier streets and crossings bisect the Active Transportation (AT) network.

Solution: Implement traffic calming measures, enhance key intersections with improved crossings, establish protected bike lanes, and introduce separated facilities on appropriate barrier streets to ensure a safer and more efficient AT network.

Part 2: Connectivity Index

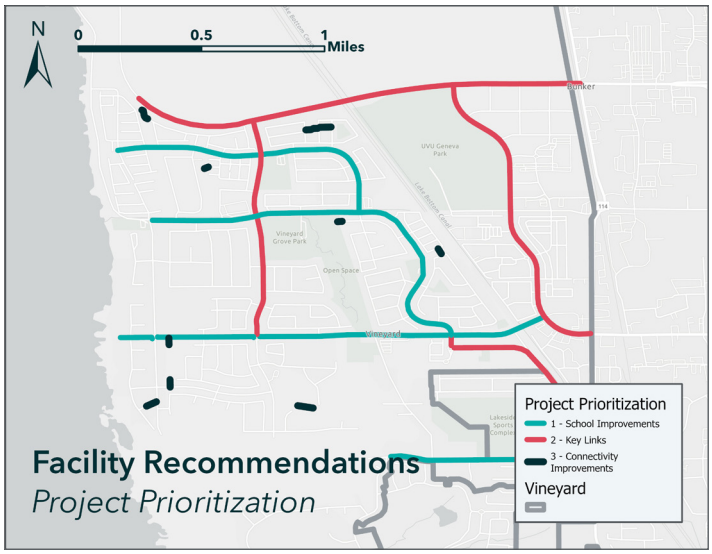
Problem: A low Connectivity Index indicates suboptimal network connectivity.

Solution: Mitigate the issue by connecting existing cul-de-sacs with pedestrian pathways. In addition, create policies that reduce the length and frequency of cul-de-sacs, block lengths, and enforce minimum connectivity standards in new developments.

Part 3: Connecting Origins and Destinations

Problem: Inadequate access to key destinations for AT users.

Solution: Enhance access by reducing AT barriers, increasing connectivity to create shorter travel times, and changing land use to allow a mix of uses near neighborhoods, creating more destinations.



Map 9: Depicts the roads where facility recommendations are made in the table below by project priority.

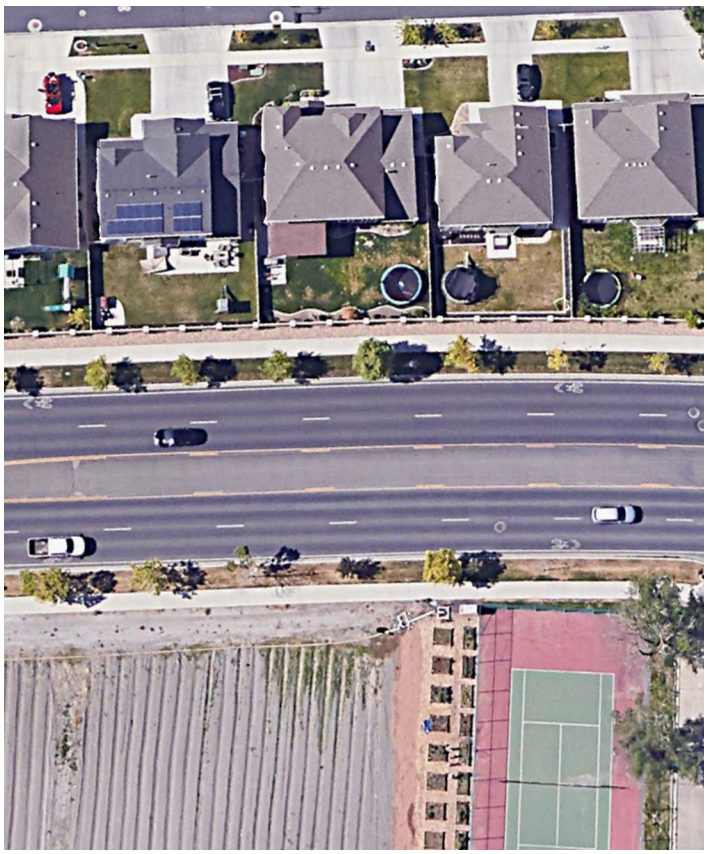
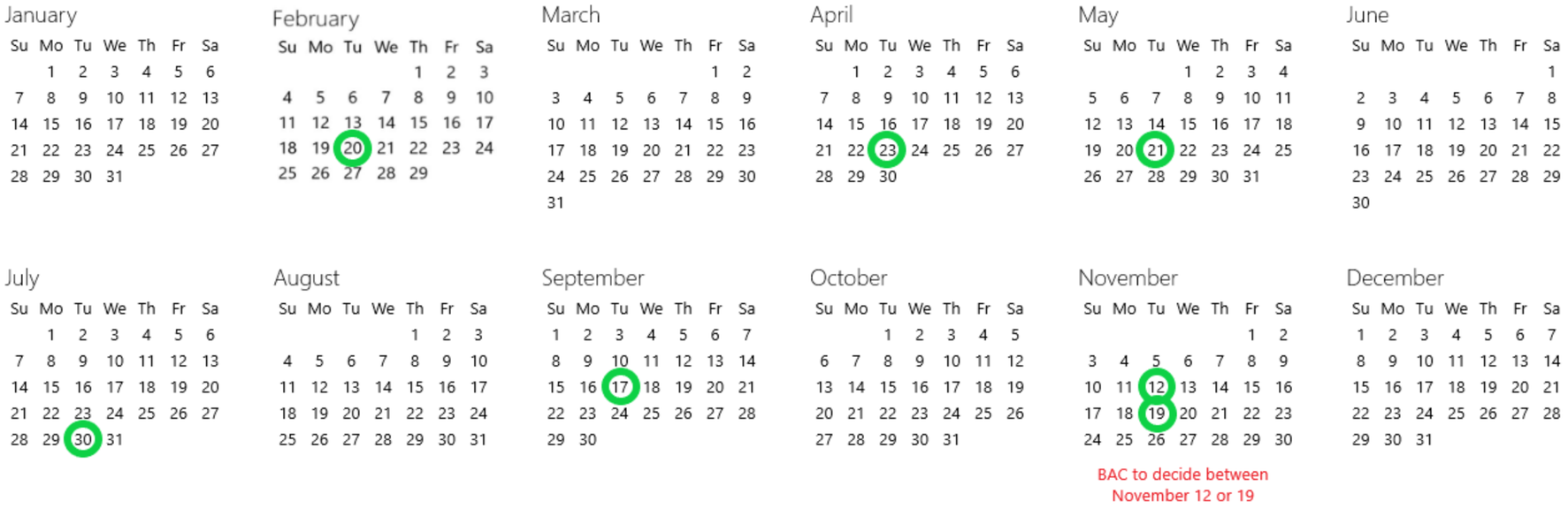


Table 3: Facility Recommendations and Prioritization

Project Priority		Street	Features
1	**School Improvements** *(Creating safer access to Schools)*	Center St	Intersection Improvements (3)
			Protected Bike Lane (Segment)
		Vineyard Rd	Intersection Improvements (7)
		400 S	Intersection Improvements (1)
			Protected Bike Lane
		Vineyard Loop Rd	Intersection Improvements (7)
2	**Key Links** *(Enhancing the AT network by creating vital, safe and comfortable links)*	Vineyard Connector Rd	Intersection Improvements (2)
			Multi-use Path
		Geneva Rd	Muli-use Path (Segment)
		Mill Rd	Intersection Improvements (4)
			Protected Bike Lane
		E Vineyard Rd	Protected Bike Lane
		Main St	Intersection Improvements (4)
			Protected Bike Lane (Segment)
3	**Connectivity Improvements** *(Bolstering the AT network's ability to link the community and destinations)*	Silversprings Dr	Cul-de-sac Connection
		W 500 N	Cul-de-sac Connection
		N 160 E	Cul-de-sac Connection
		N 190 E	Cul-de-sac Connection
		E 370 N	Cul-de-sac Connection
		Hackberry Rd	Cul-de-sac Connection
		Sicula Rd	Cul-de-sac Connection
		S 300 W	Cul-de-sac Connection
		Dry Creek Ln	Cul-de-sac Connection

2024 BAC Meeting Schedule



BAC to decide between November 12 or 19

Meeting Time 5:30 pm