Ada County Highway District Curb Ramp and Pedestrian Pushbutton 2020 Update

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LOCHNER

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2011 Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG), US Access Board

Manual on Uniform Traffic Control Devices (MUTCD), Federal Highway Administration

2019 ACHD ADA Self-Evaluation and Transition Plan

2010 ADA Standards for Accessible Design

Executive Summary

The 2020 ADA Diagonal Curb Ramp and Pedestrian Pushbutton Inventory Assessment Project provides an update to a subset of Ada County Highway District's (ACHD) inventory of curb ramps and the development of a new inventory of pedestrian pushbuttons.

In 2019, ACHD adopted an ADA Self-Evaluation and Transition Plan for achieving compliance with the American's with Disabilities Act (ADA) in the public right-of-way. The Transition Plan recommends periodically updating the existing inventory, including an accessibility assessment of the diagonal curb ramp inventory and the pedestrian signal inventory. The curb ramps included in this project were locations near intersections, signal poles, pedestrian crossings, and also curb ramps previously identified in the ADA Transition Plan as diagonal curb ramps with no deficiencies identified. The pedestrian pushbutton pole locations were identified using the ACHD pole database that includes all traffic signals, pedestrian crossings, and accessible pedestrian signal (APS) locations.

For the 2020 Inventory Assessment project, inventory teams received training on the latest ADA requirements and data collection procedures specific to this project. Data pertaining to the compliance of the curb ramps and pedestrian pushbuttons was collected during the spring and summer of 2020 and used to update the Transition Plan that will serve as a baseline for future pedestrian facility improvements.

A total of 6,338 curb ramps and 2,889 traffic signal poles were identified and evaluated for compliance as part of this project. Of the 2,889 poles identified, 665 (23%) of them did not have a pushbutton present. All traffic signal poles close to intersections and mid-block crossings were evaluated because there was no clear indication where pedestrian pushbuttons were installed. Poles without pushbuttons included light poles or other utility poles, intersections with pre-timed pedestrian crossing phases, and signal poles that had additional standalone poles for the pushbuttons. The remaining 2,224 (77%) traffic signal poles with pedestrian pushbuttons present were evaluated for ADA compliance. Analysis of the data shows that 477 (21.4%) of the 2,224 poles with pushbuttons and 2,707 (42.7%) of the curb ramps evaluated have no deficiencies.

In addition to the compliance evaluation, each location was assigned a proximity priority based on its location relative to entities covered by the Americans with Disabilities Act: locations of citizen complaint/request, government offices and public facilities, transportation, commercial districts, and employers. A prioritization matrix (see Table 2 on Page 6) previously developed for the ACHD Transition Plan was used to rank the curb ramps and pushbuttons based on a combination of the proximity priority and compliance category. This matrix was used to prioritize the curb ramps and pedestrian pushbuttons evaluated during this project into High, Medium and Low Priorities.

A summary of the inventory findings and prioritization of curb ramps and pushbuttons is provided in Table 1 below.

Table 1. Priority Rank Distribution of Curb Ramps and Pushbuttons

Priority Rank	Curb Ramps	Percent Total	Pushbuttons	Percent Total
High	516	8.1%	859	29.7%
Medium	995	15.7%	401	13.9%
Low	2,120	33.5%	487	16.9%
No Deficiencies	2,707	42.7%	477	16.5%
No Pushbutton	-	-	665	23.0%
Totals	**6,338**	**100%**	**2,889**	**100%**

The assessment of the diagonal curb ramp and pedestrian pushbutton data will help ACHD in its continuous effort to identify and address accessibility barriers in the public right-of-way that limit access to individuals with disabilities.

1.0 Methodology

This project required an update to a selected portion of ACHD's existing curb ramp inventory and the creation of a new pedestrian pushbutton inventory. All data was collected by field staff using Survey123 and Collector mobile applications for ArcGIS online.

1.1 Identification Process

The curb ramps evaluated through this project are a subset of the countywide pedestrian curb ramp database and were identified based on their location relative to intersections, signal poles, pedestrian crossings, and also previously identified in the ADA Transition Plan as diagonal curb ramps with no deficiencies identified. A total of 6,338 diagonal curb ramps were identified through this process.

The pedestrian pushbutton pole locations were identified using the ACHD pole database that includes all traffic signals, pedestrian crossings, and accessible pedestrian signal (APS) locations. A total of 2,889 poles were identified for this assessment.

1.2 Training

Prior to beginning the inventory process, a training manual was developed to ensure the data would be collected correctly and consistently throughout the county. Each member of the data collection team completed a two-day training course where they learned the ADA requirements for the public right-of-way, how to measure all components of curb ramps and pushbuttons that pertain to compliance, and the correct operation of the data collection equipment and ArcGIS applications.

1.3 Data Collection

The field data collection effort began in March, 2020 and was completed the end of July, 2020. During this time, 6,338 curb ramps and 2,889 traffic signal poles (2,224 with pushbuttons) were inventoried. These features were measured and documented using custom data forms created with the ArcGIS applications. The questions on the form are included in Appendix A and Appendix B. Once a component of a curb ramp or pushbutton was found to be noncompliant the compliance category was assigned according to the barrier categories described in Tables 3 and 4.

A new curb ramp database was created to update a subset of the entire existing ACHD curb ramp inventory. The following attributes were measured and evaluated at curb ramp locations:

- Surface type and condition
- Ramp width, ramp running slope, and ramp cross slope
- Location of ramps relative to marked crosswalks
- Turning space width, turning space running slope, and turning space cross slope
- Transition area characteristics, such as gutter counter slope, perpendicular grade breaks, etc.
- Flare slopes
- Detectable warning dimensions and characteristics

The new pushbutton database includes the evaluation of all poles at 623 intersections and mid-block crossings with pedestrian pushbuttons. All traffic signal poles near those intersections and mid-block crossings were evaluated because there was no clear indication where pedestrian pushbuttons were installed. Of the 2,889 traffic signal poles that were inventoried, 665 (23%) did not have a pedestrian pushbutton. The poles without pushbuttons include intersections where the pedestrian crossing phase is pre-timed with the traffic signal, corners that have a traffic signal pole and two standalone poles specifically for the pedestrian signal pushbuttons, and utility or light poles. Not all poles are required to have a pedestrian pushbutton.

The following attributes were measured and evaluated at pushbutton locations:

- Adjacent turning space, ramp and accessible route between
- Pushbutton location
- Height
- Diameter
- Signing
- Activation
- Tactile arrow
- Locator tone

Once the field data was collected, it went through a multi-level quality control process to verify accuracy.

1.4 Prioritization

ACHD previously developed a prioritization matrix, shown in Table 2 on page 6, to prioritize locations based on a combination of level of compliance and proximity to locations listed in the Americans with Disabilities Act. The ADA 28 CFR 35.150 (d) states that priority should be given to ramps near state and local government offices and facilities, transportation facilities, places of public accommodation, and employers.

The level of compliance was determined using the accessibility barrier category descriptions in Tables 3 and 4. The curb ramp barrier category descriptions from the 2019 Transition Plan were updated to conform to the technical requirements of the 2010 ADA Standards for Accessibility Design and best practices including the 2011 Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG). The pushbutton barrier category descriptions were developed using the Manual on Uniform Traffic Control Devices (MUTCD) and best practices like the 2011 PROWAG.

Each curb ramp and pushbutton was assigned a rank based on the matrix in Table 2. The facilities were ranked as High, Medium, or Low Priority. Each ranking was color referenced, with the High Priority rank shaded in purple, the Medium Priority rank in yellow, and the Low Priority rank in green. The facilities with no deficiencies were ranked as No Deficiencies Identified and are not shaded. The columns in the matrix indicate the assigned priority and are in order of importance from left to right, with the left column having the highest importance. The rows indicate the category of condition assigned to each facility during the evaluation process, with the top row having the highest importance.

Table 2. Prioritization Matrix for Curb Ramps and Pushbuttons

Curb Ramps and Pedestrian Pushbuttons		ADA 35.150(d) Geospatial Proximity Priorities*				
		A	**B**	**C**	**D**	**E**
Priorities (Category)	**Priority Description**	**Location of Citizen Complaint / Request (ADA Title II Program Access)**	**Location Serving Government Offices & Public Facilities**	**Location Serving Transportation**	**Location Serving Commercial Districts, Employers**	**Location Serving Other Areas**
1	**See Category 1 Description**	A1	B1	C1	D1	E1
		High Priority ----------					
2	**See Category 2 Description**	A2	B2	C2	D2	E2
3	**See Category 3 Description**	A3	B3	C3	D3	E3
			Medium Priority ----------			
4	**See Category 4 Description**	A4	B4	C4	D4	E4
			Low Priority ----------			
5	**No deficiencies identified**	A5	B5	C5	D5	E5

**The priorities listed under columns B, C, D, and E are specified under title II 28 CFR § 35.150 (d).*

Table 3. Curb Ramp Barrier Descriptions

Category 1:

- The curb ramp is constructed with asphalt or other material that does not provide a smooth, firm, stable, slip resistant surface.
- The curb ramp condition includes heavy cracking, settlement, or vertical surface discontinuities greater than 0.5 inches on the ramp, turning space (landing), or clear space.

Category 2:

- The turning space width is less than 36 inches by 36 inches or there is no turning space present.
- The width of ramp is less than 36 inches.
- The width of the clear space at the bottom of the ramp is less than 36 inches.
- The ramp is not located completely within marked crossings (when present).
- The running slope of the ramp exceeds 8.33 percent.
- The ramp does not have a detectable warning surface.
- The curb ramp condition includes vertical surface discontinuities between 0.25 and .05 inches on the ramp, turning space, or clear space.

Category 3:

- The turning space width is greater than 36 inches, but less than 48 inches.
- The width of ramp is greater than 36 inches, but less than 48 inches.
- The width of the clear space at the bottom of the ramp is greater than 36 inches, but less than 48 inches.

Category 3 (cont.):

- The gutter counter slope exceeds 5 percent.
- The detectable warning surface has deteriorated or been damaged.
- The detectable warning surface does not meet all of the following requirements: Correct dome size and spacing, contrast with adjacent surface, extends 2 feet in the direction of pedestrian travel, spans the full width of the ramp or turning space, and is placed according to PROWAG requirements.
- The curb ramp condition includes vertical surface discontinuities less than 0.25 inches on the ramp, turning space, or clear space.

Category 4:

- Cross slope of the ramp exceeds two percent.
- Flared sides (if applicable) exceed 10 percent.
- The transitions on and off the curb ramp are not flush and/or have abrupt level changes.
- Grade breaks are not perpendicular to the direction of travel.

Category 5:

- No deficiencies identified.

Table 4. Pushbutton Barrier Descriptions

Category 1:

- The pushbutton is not adjacent to a landing.
- The pushbutton is obstructed.
- There is no accessible route from the pushbutton to the curb ramp.

Category 2:

- The pushbutton is not located between the edge of the crosswalk line (extended) farthest from the center of the intersection and the side of a curb ramp (if present), but not greater than 5 feet from said crosswalk line.
- The pushbutton is not located between 1.5 and 6 feet from the edge of the curb, shoulder or pavement or the pushbutton is more than 10 feet from the edge where there are physical constraints that make it impractical to place the pushbutton between 1.5 and 6 feet from the edge of the curb, shoulder or pavement.
- The face of the pushbutton is not parallel to the crosswalk to be used.
- The mounting height of the pushbutton is less than 3 feet or more than 4 feet above the sidewalk or landing.

Category 3:

- The pushbutton diameter is less than 2 inches.
- The pushbutton cannot be operated with one hand.
- The pushbutton cannot be operated using a closed fist.
- The pushbutton requires more than 5 lbs. of force to operate.

Category 3 (cont.):

- There are no signs mounted adjacent to or integral with the pedestrian pushbutton explaining their purpose and use.
- Signs do not clearly indicate which crosswalk signal is actuated by each pedestrian pushbutton.

Category 4:

- No tactile arrow is present on the pushbutton.
- The tactile arrow on the pushbutton does not have high visual contrast (Light on dark or dark on light).
- The tactile arrow is not aligned parallel to the direction of travel on the associated crosswalk.
- A locator tone is not provided.
- The locator tone does not have a duration of 0.15 seconds or less.
- The locator tone does not repeat at one second intervals.
- The locator tone does not deactivate when the traffic control signal is in flashing mode.
- The locator tone intensity is not responsive to ambient sound.
- The locator tone is not audible 6 to 12 feet from the pushbutton.
- There is not at least 10 feet between poles equipped with accessible pedestrian pushbuttons.

Category 5:

- No deficiencies identified.

2.0 Findings

During this project, a total of 6,338 curb ramps and 2,889 traffic signal poles were identified and evaluated for compliance. Table 3 summarizes the curb ramps and pushbuttons that fall into each compliance category based on the barrier descriptions from the previous section. Analysis showed that 42.7% of the curb ramps evaluated during this project have no deficiencies and 21.4% of the poles with pushbuttons present no deficiencies.

Table 5. Summary of Compliance by Barrier Description Category

Category	Curb Ramps	Percent Total	Pushbuttons	Percent Total
1	279	4.4%	298	13.4%
2	1,037	16.4%	1,097	49.3%
3	1,412	22.3%	99	4.5%
4	903	14.2%	253	11.4%
5	2,707	42.7%	477	21.5%
N/A*	-		665	-
Totals	**6,338**	**100%**	**2,889**	**100%**

N/A* = Pole locations with no pushbutton present

2.1 Curb Ramps

Table 6 on page 10 and Maps 1 through 3 summarize the priority ranks for ACHD's curb ramps that were calculated from the compliance and proximity scores. The inventory for the 2020 update includes 516 high priority curb ramps, 995 medium priority curb ramps, and 2120 low priority curb ramps. There are also 2,707 with no deficiencies identified.

2.2 Pushbuttons

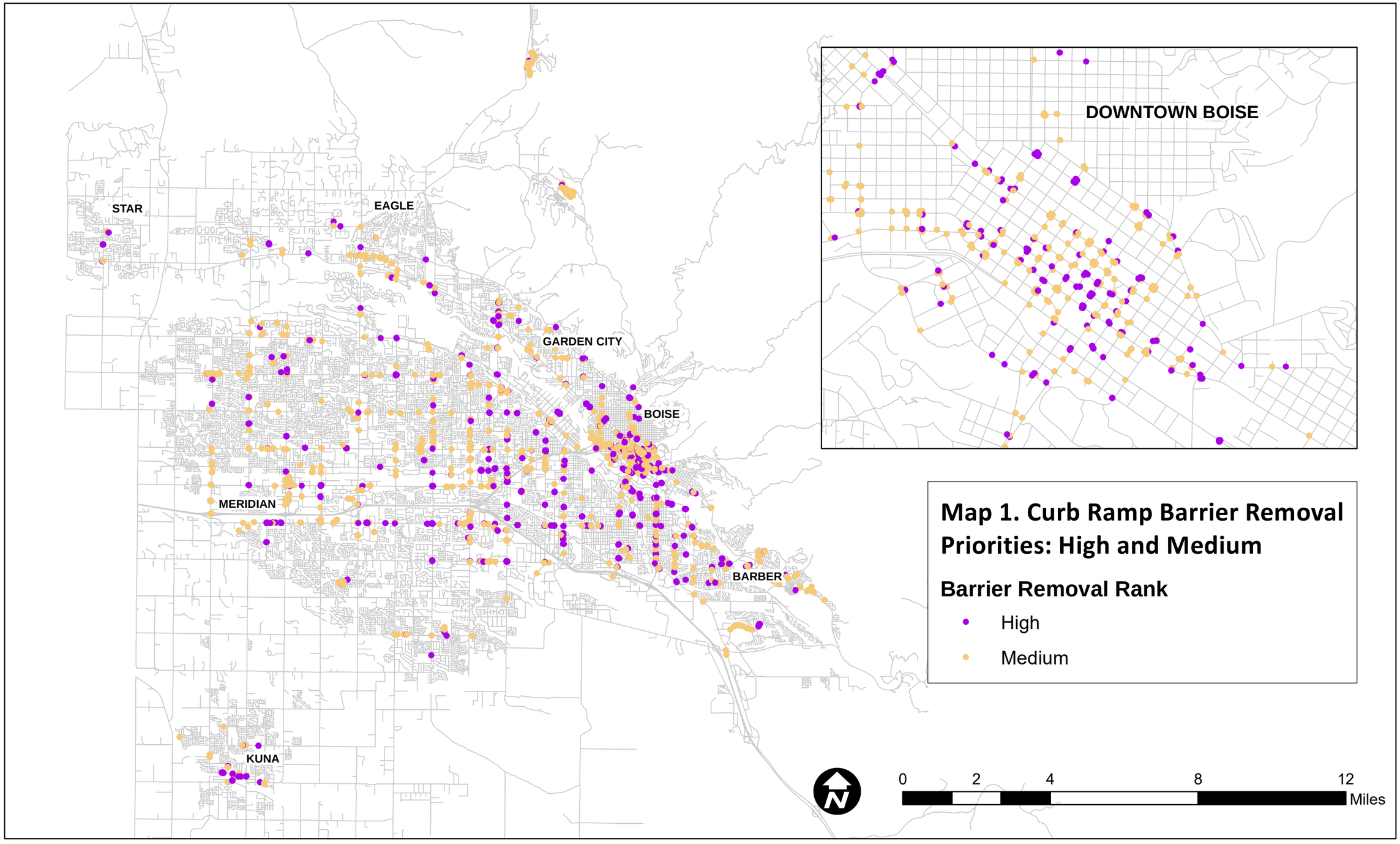
Table 7 on page 11 and Maps 4 through 6 summarize the priority ranks for ACHD's pushbuttons that were calculated from the compliance and proximity scores. The inventory for the 2020 update includes 859 high priority pushbuttons, 401 medium priority pushbuttons, and 487 low priority pushbuttons. There are also 477 pushbuttons with no deficiencies identified and 665 poles that did not have a pushbutton present.

Table 6. 2020 Curb Ramp Priority Summary

Category	Priority	Total Ramps	Percent Total
1	A1	1	0.0%
1	B1	20	0.3%
1	C1	85	1.3%
1	D1	62	1.0%
2	B2	88	1.4%
2	C2	232	3.7%
2	A2	10	0.2%
3	A3	9	0.1%
4	A4	9	0.1%
Subtotal	-	516	8.1%
2	D2	227	3.6%
3	B3	137	2.2%
3	C3	396	6.2%
3	D3	235	3.7%
Subtotal	-	995	15.7%
1	E1	111	1.8%
2	E2	480	7.6%
3	E3	635	10.0%
4	B4	48	0.8%
4	C4	270	4.3%
4	D4	156	2.5%
4	E4	420	6.6%
Subtotal	-	2,120	33.5%
5	A5	21	0.3%
5	B5	196	3.1%
5	C5	653	10.3%
5	D5	371	5.9%
5	E5	1,466	23.1%
Subtotal	-	2,707	42.7%
Totals	**-**	**6,338**	**100.0%**

Table 7. 2020 Pedestrian Pushbutton Priority Summary

Category	Priority	Total Ramps	Percent Total
1	A1	10	0.4%
1	B1	32	1.4%
1	C1	105	4.7%
1	D1	85	3.8%
2	B2	128	5.8%
2	C2	480	21.6%
2	A2	10	0.4%
3	A3	3	0.1%
4	A4	6	0.3%
Subtotal	-	859	38.6%
2	D2	320	14.4%
3	B3	21	0.9%
3	C3	39	1.8%
3	D3	21	0.9%
Subtotal	-	401	18.0%
1	E1	66	3.0%
2	E2	159	7.1%
3	E3	15	0.7%
4	B4	35	1.6%
4	C4	115	5.2%
4	D4	75	3.4%
4	E4	22	1.0%
Subtotal	-	487	21.9%
5	A5	15	0.7%
5	B5	101	4.5%
5	C5	221	9.9%
5	D5	83	3.7%
5	E5	57	2.6%
Subtotal	-	477	21.5%
Totals	**-**	**2,224**	**100.0%**


STAR
EAGLE
GARDEN CITY
BOISE
MERIDIAN
BARBER
KUNA
DOWNTOWN BOISE
Map 1. Curb Ramp Barrier Removal Priorities: High and Medium
Barrier Removal Rank
High
Medium
0
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4
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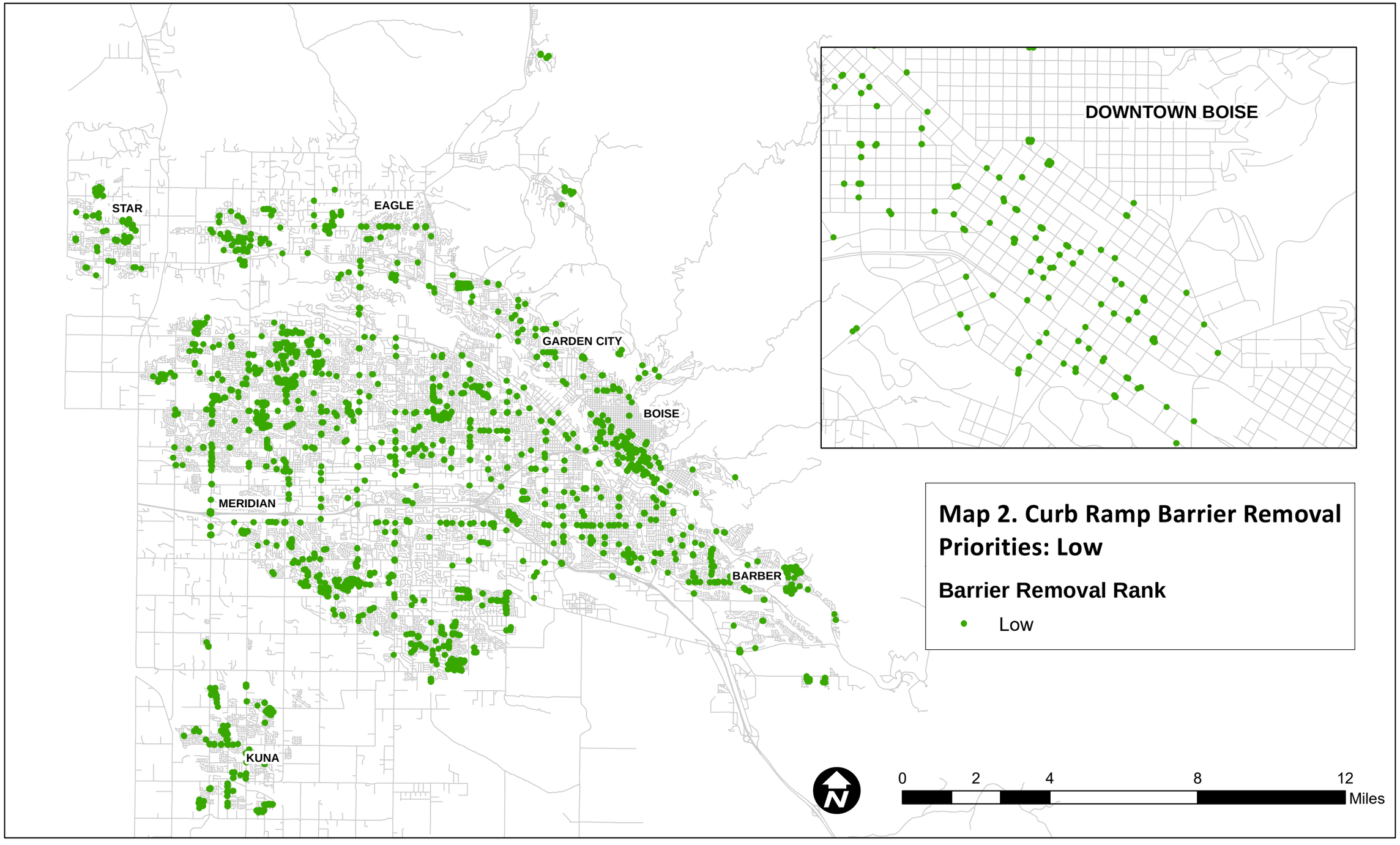
Miles


DOWNTOWN BOISE
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GARDEN CITY
BOISE
MERIDIAN
BARBER
KUNA
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Barrier Removal Rank
Low
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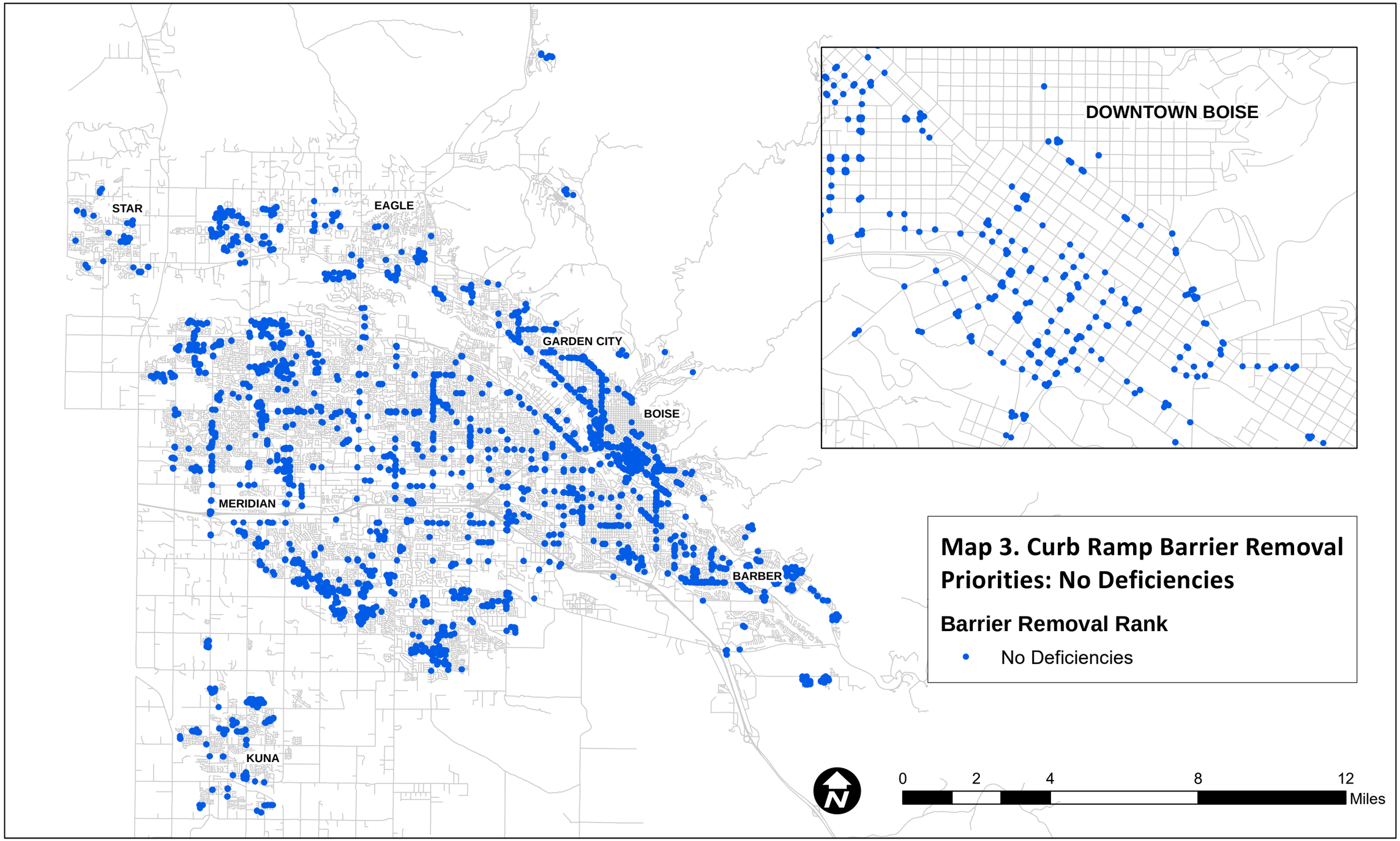
DOWNTOWN BOISE
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BARBER
KUNA
Map 3. Curb Ramp Barrier Removal Priorities: No Deficiencies
Barrier Removal Rank
No Deficiencies
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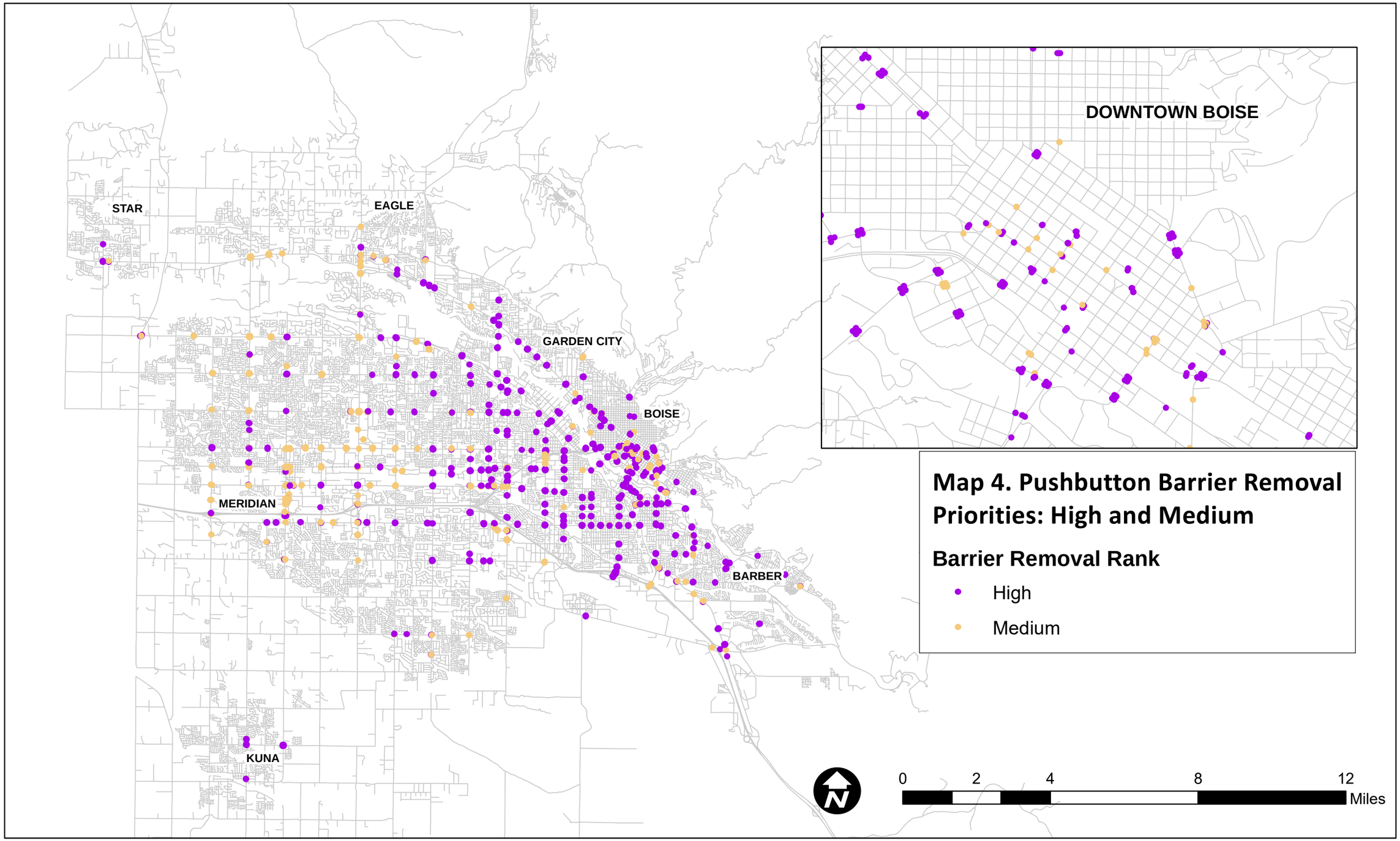
12
Miles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Map 4. Pushbutton Barrier Removal Priorities: High and Medium
Barrier Removal Rank
High
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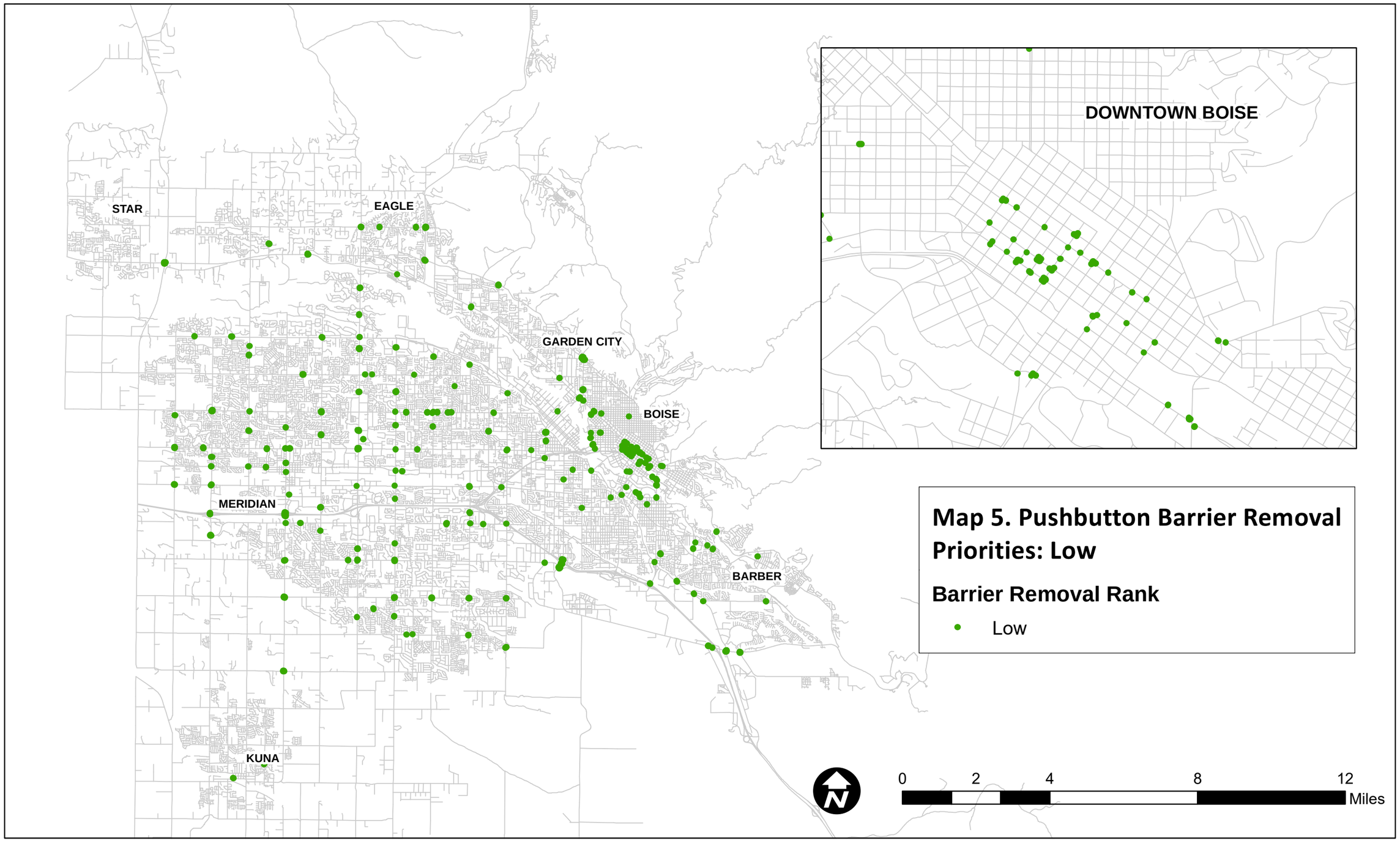
Miles


DOWNTOWN BOISE
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Map 5. Pushbutton Barrier Removal Priorities: Low
Barrier Removal Rank
Low
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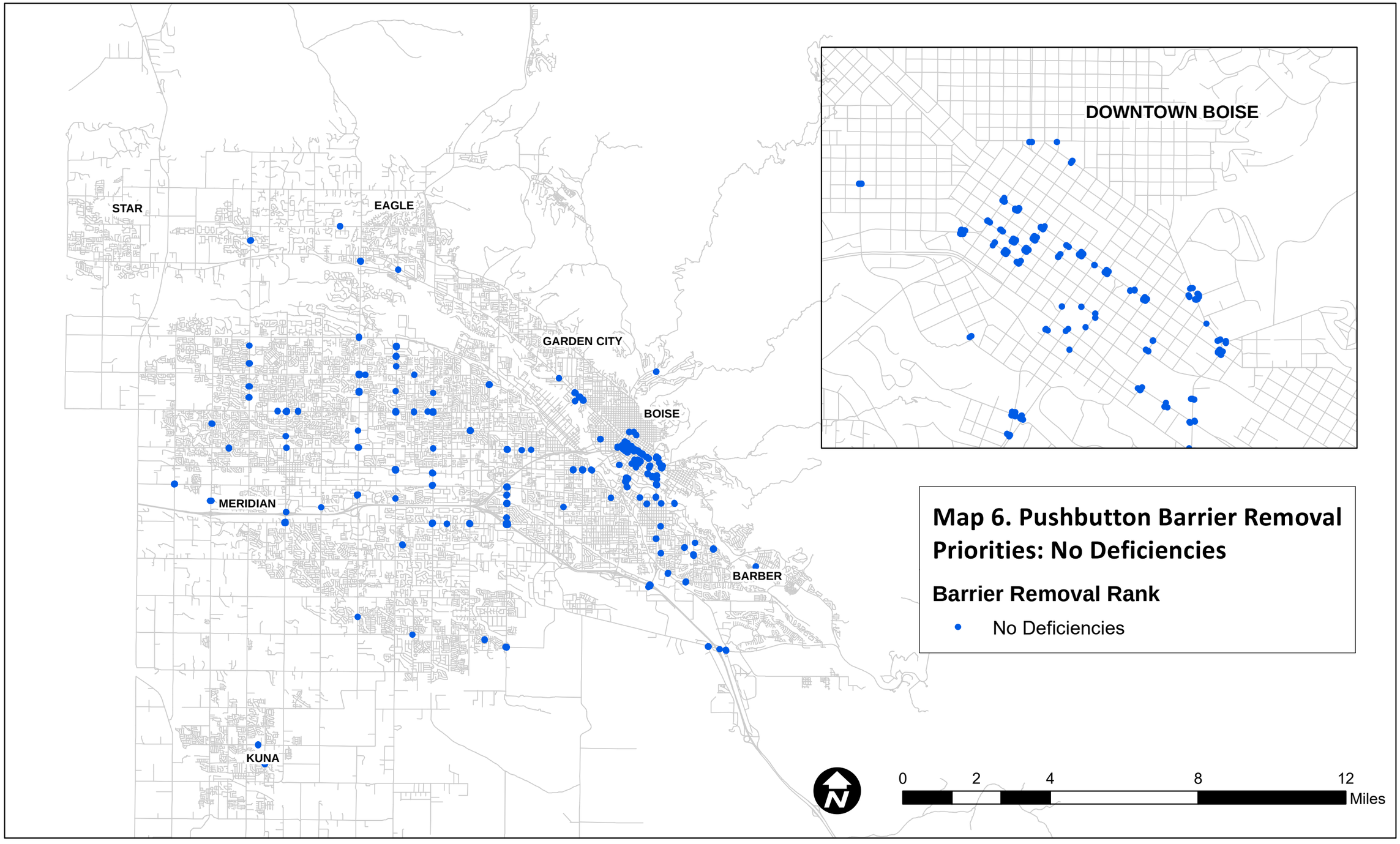
Miles


DOWNTOWN BOISE
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Map 6. Pushbutton Barrier Removal Priorities: No Deficiencies
Barrier Removal Rank
No Deficiencies
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8
12
Miles

3.0 Definitions

The following is a summary of many definitions found in this document and within the ADA. Please refer to the Americans with Disabilities Act for the full text of definitions and explanations.

Accessible. A site, building, facility, or portion thereof is deemed accessible when it is approachable and usable by persons with disabilities in compliance with technical standards adopted by the relevant Administrative Authority.

Barrier. Physical elements of a facility that impede access by people with disabilities.

Complaint. A complaint is a claimed violation of the ADA.

Cross Slope. The grade that is perpendicular to the direction of pedestrian travel. On a sidewalk, cross slope is measured perpendicular to the curb line or edge of the street or highway.

Curb Line. A line at the face of the curb that marks the transition between the curb and the gutter, street, or highway.

Curb Ramp. A ramp that cuts through or is built up to the curb. Curb ramps can be perpendicular or parallel, or a combination of parallel and perpendicular ramps.

Disability. The term disability means, with respect to an individual:

- A physical or mental impairment that substantially limits one or more of the major life activities of such individual; or
- A record of such impairment; or
- Being regarded as having a disability or such impairment.

Facility. All or any portion of buildings, structures, improvements, elements, and pedestrian or vehicular routes located in the public right-of-way.

Grade. The degree of inclination of a surface. See Slope. In public right-of-way, grade is the slope parallel to the direction of pedestrian travel.

Grade Break. The line where two surface planes with different grades meet.

Operable Part. A component of an element used to insert or withdraw objects, or to activate, deactivate, or adjust the element. The technical requirements for operable parts apply to operable parts on accessible pedestrian signals and pedestrian

pushbuttons, and parking meters and parking pay stations that serve accessible parking spaces.

Path of Travel. A path of travel is a continuous, unobstructed way of pedestrian passage by means of which a newly constructed or altered area may be approached, entered and exited and which connects an area with an exterior approach (including sidewalks, streets, and parking areas), an entrance to the facility, and other parts of a facility. An accessible path of travel may consist of walks and sidewalks, curb ramps and other interior or exterior pedestrian ramps; clear floor paths through lobbies, corridors, rooms, and other improved areas; parking access aisles; elevators and lifts; or a combination of these elements. Within the context of alterations, path of travel also includes restrooms, telephones, and drinking fountains serving the altered area.

Pedestrian Access Route. A continuous and unobstructed path of travel provided for pedestrians with disabilities within or coinciding with a pedestrian circulation path in the public right-of-way.

Pedestrian Circulation Path. A prepared exterior or interior surface provided for pedestrian travel in the public right-of-way.

Public Right-of-Way. Public land or property, usually in interconnected corridors, that is acquired for or dedicated to transportation purposes.

Running Slope. The grade that is parallel to the direction of pedestrian travel.

Slope. Ground surface that forms a natural or artificial incline. Slope is typically conveyed as either a percentage or a ratio that represent the change in elevation between two points of an incline divided by the horizontal distance between the two points.

- Cross Slope: The slope that is perpendicular to the direction of travel.
- Running Slope: The slope that is parallel to the direction of travel.

Technical Standards. Specify the design criteria for accessible features, including the specific numbers, conditions, and measurements that are required.

Vertical Surface Discontinuities. Vertical differences in level between two adjacent surfaces.