Non-Motorized Wayfinding Study for:

City of East Peoria, Village of Morton, City of Pekin, & City of Washington (Draft)

As Commissioned by the Tri-County Regional Planning Commission

Farnsworth Group, Inc.
7-28-2017

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Acknowledgements

Farnsworth Group would like to thank the following communities and governmental agencies that participated in this Non-Motorized Wayfinding Study. Their time and input was critical to developing the overall wayfinding scheme outlined in this report. As a group, it is fair to say that we hope this Wayfinding System can be adopted by other communities, counties, and townships across the 3-county area thus turning our current and future bikeway system into a truly regional system.

TCRPC Staff

- Eric Miller, Executive Director
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Contributing Communities

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- Ty Livingston, Director of Planning & Community Development

Village of Morton, Illinois

- Craig Loudermilk, Director of Public Works

City of Pekin, Illinois

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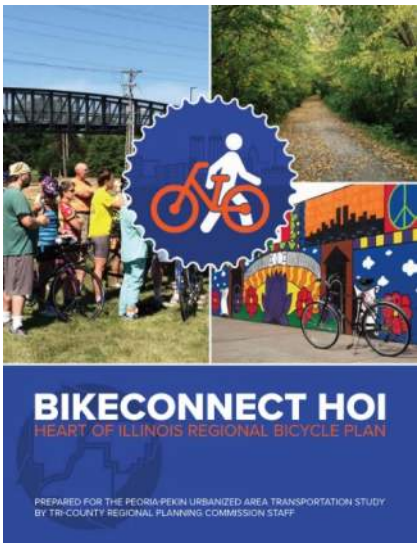
Section 1: Background



BikeConnect HOI Plan: Action taken by the Tri-County Regional Planning Commission on September 27, 2016 engaged Farnsworth Group to begin a Non-Motorized Wayfinding Study for four communities in Tazewell County. They included the City of East Peoria, Village of Morton, City of Pekin, and the City of Washington. The Non-Motorized Wayfinding Study was developed as a need identified in the BikeConnect HOI / Heart of Illinois Regional Bicycle Plan Draft dated March 1, 2017. The Action Plan outlined in in the BikeConnect HOI / Heart of Illinois Regional Bicycle Plan may be found in Chapter 6, page 81. **(See Appendix A)**

The following items were already covered in the BIKECONNECT HOI PLAN and so they are not addressed here:

- On-road shared lanes markings
- Share the road signage
- Bikeway lane configuration and layout
- Bikeway construction

Section 2: Overall Approach

Wayfinding by Definition: Wayfinding is defined as the ability to know where you are spatially in an environment, then present ways to move from your current environment to your desired location. It refers to the user experience of orientation and choosing a path within the environment with the tools and elements to aid in that orientation.

Project Approach: The overall approach to this study was to study wayfinding opportunities for the existing and future bikeways within Tazewell County and come up with a signage system that will meet the Standards of the Illinois Department of Transportation (IDOT) and Manual on Uniform Traffic Control Devices (MUTCD) as well as provide some ability to customize the signage for the various Cities, Villages, and other governmental bodies within Tazewell County. Destination, direction, and distance information will be included in the Wayfinding System. Potential destinations for each of the 4 communities were also reviewed and summarized. Finally potential locations were identified based on the current bikeway system along with potential cost for completing the Wayfinding System.

Section 3: Sign Types for Bicycle Wayfinding

Sign Concept: The backbone of the Wayfinding System consists of 5 sign types. Since non-motorized routes exist both in community and state right of ways, it was important that a system was developed that could meet the requirements of IDOT and MUTCD. The Wayfinding Signage provides the feel and look of standard traffic signs, while providing a more detailed design and appearance to bicyclist.

We also incorporated informational kiosk signs that may be used in strategic locations, trail head locations, and points of interest for the community or the region.

Signs for the Bicycle Wayfinding System

Identifier Sign (See Figure 1 & 2) – A custom identifier sign sits on top of the Directional, Conformational, and Turn Signs to provide a place for the Bikeway Logo, and trail or city information. This begins to provide continuity of the Regional System. Should other communities or counties choose a different type of Wayfinding we would strongly encourage them to incorporate the HOI Wayfinding Logo to promote the Regional System. The first preferred option to label this sign should be using the trail name where it is located. Other options may include listing the community name, county name or HOI Bikeway System should a trail name be unavailable. **See Figure 1, Option 4** for the selected **Identifier Sign**. Using the **Identifier Sign** at part of the system there are 5 basic signage types.

Directional Signs (See Figure 3): These signs are located at the junction of 2 or more bike trails. Directional Signs are comprised of a Custom Identifier Sign and then Destination Supplemental Signs. Directional Signs are located on the near-side of the intersection. They include destinations and their associated directional arrows & distances.

Confirmation Signs (See Figure 4): These confirm that a cyclist is on a designated bikeway. Each Confirmation Sign includes a Custom Identifier Sign and then Destination Supplemental Signs. Confirmation signs are located mid-block or on the far side of intersections. Confirmation Signs include the destination and their associated distances, but no directional arrows.

Turn Signs (See Figure 5): These signs indicate where a bikeway turns from one street or trail onto another street or trail. They are not used at the junction of 2 bike trails. Directional Signs would be used in that case. Turn signs are located on the near-side of the intersection. Each Turn Sign includes a Custom Identifier Sign and the appropriate Directional Arrow Supplemental Sign.

Community Signs (See Figure 6): These signs are used within a community area where no bikeways exist, but it would be desirable to provide guidance to the existing bikeway. It is assumed that these signs are used on non-designated bikeways.

Informational Signs (See Figure 6): Kiosk signs shall be located at trail heads or other important informational locations along the bikeway or within communities, as determined by each community. They will include 3 different sign panels that could be used as follows:

- Panel 1: Map of the bikeway system they are about to enter.
- Panel 2: Map of the bikeway system for the entire region.
- Panel 3: Local information about community events

The HOI Bikeway System Logo should be included on Panel 1 and 2 so that users understand they are still on the Regional Bikeway System.

Section 4: Sign Placement Recommendations

The sign placement recommendations and destination list are included in Exhibit Section of this report. Refer to the Exhibits Section for the overall plan and individual Community Plans.

By using Federal and State guidelines as a foundation, the following principles shall be incorporated for the placement of signs:

1. At a minimum, a confirmation sign shall be placed at the beginning of each bikeway. An information sign is optional.
2. When a bikeway turns, a turn sign will be located in advance of the turn on the near-side of the intersection.
3. When bikeways intersect, a directional sign will be located on the near-side of each intersection approach.
4. To allow adequate notification of left turns, the Directional or Turn Sign should be placed a distance before the intersection based on the total number of lanes the bicyclist must merge across to make a legal left turn. See table below for recommendations:

No. of Lanes to Merge	Description	Distance before Intersection
0	Single travel lane in each direction	25’ preferred (15’ to 50’ recommended)
1	• Single travel lane and bike lane in each direction • Two lanes in each direction • Single travel lane in each direction plus center left turn lane or pockets • One-way street with two lanes	100’ preferred (75’ to 150’ recommended)
2	• One travel lane and bike lane in each direction with center/left turn lane or pockets • Two travel lanes and bike lane in each direction • Three lanes in each direction • Two travel lanes in each direction plus center/left turn lane or pockets • One-way street with three lanes	200’ preferred (175’ to 300’ recommended)
3	• Two travel lanes and bike lane in each direction plus center/left turn lane or pockets • One-way street with four lanes	200’ preferred (175’ to 300’ recommended)

5. The Directional or Turn Sign should always be located in the block immediately preceding the junction or turn and at least 25’ past the preceding intersection. In each instance, turn and decision signs should be located based on local circumstances and practices.
6. Confirmation Signs will be located approximatly every ½ mile to one-mile intervals.

7. At locations with complicated turns or decisions, locate a Confirmation Sign on the far-side of the intersection, with sight distance of the intersection, but at least 25' past the intersection.
8. Confirmation signs should be located immediately following bikeway junctions on streets that do not have bicycle lanes.

Section 5: Sign Design Recommendations

The following recommendations are made for the design of individual signs. See **Figures 1-6** in the figures section of this report for graphic examples.

Custom Identifier Sign (See Figure 1 & 2):

The **Custom Identifier Sign** shall meet the following standards:

1. Size: 24" Wide x 18" Tall
2. Blade Material: 80 mil Aluminum
3. Printing: 3M Engineer Grade printing with retroreflective coatings.
4. Sign Information: HOI Logo, Trail Name
5. Protection: 3M Smart Shield to protect against fading and to easily remove graffiti.
6. 2 predrilled holes
7. 1 ½" radius corners
8. Color: Green per MUTCD standards or approved other
9. Font: FHWA C Series capital letters with a height of 2.75". All CAPS
10. The sign should be modeled like the MUTCD D11 Series with a white border and green background.

Directional Sign (See Figure 3):

Directional Signs shall meet the following standards:

1. Top of Sign should be 1 **Identifier Sign**, 24" Wide x 18" Tall
2. Directional Signs should be 6" tall by 24" long
3. Blade Material: 80 mil Aluminum
4. Printing: 3M Engineer Grade printing with retroreflective coatings.
5. Size Information: Destination Name, Destination Distance, Directional Arrow
6. Protection: 3M Smart Shield to protect against fading and to easily remove graffiti.
7. 2 predrilled holes
8. 1 ½" radius corners
9. Color: Green per MUTCD standards or approved other
10. Font: FHWA C Series capital letters with a height of 4". All CAPS
11. Post: Pre-drill breakaway square post measuring less than 2.25" to meet MUTCD breakaway requirement.
12. Maximum No. of **Destination Signs** per post: 3
13. Minimum height from ground level to the bottom of the first sign: 7'
14. Destinations shall be listed in order of distance with the closest destination being at the top.
15. For long names that do not fit on one line use the following approach:
    a) For names, slightly longer that one line, compress the font to no less than 90% of its standard size.
    b) Use abbreviations.
    c) Use a two-line sign if needed.

16. Arrow Order: For **Directional Signs** arrange the arrows in the following order:
    a) Top – arrow direction straight (Center Justified)
    b) Middle – Arrow direction left (Left Justified)
    c) Bottom – Arrow direction right (Right Justified)
17. The sign should be modeled like the MUTCD D1 Series with a while border and green background. Specifically use the following:
    a) Sign with 1 Line D1-1a
    b) Sign with 2 Lines D1-2a
    c) Sign with 3 Lines D1-3a

Confirmational Sign (See Figure 4):

Directional Signs shall meet the following standards:

1. Top of Sign should be 1 **Identifier Sign**, 24" Wide x 18" Tall
2. **Confirmational Signs** should be 6" tall by 24" long.
3. Blade Material: 80 mil Aluminum
4. Printing: 3M Engineer Grade printing with retroreflective coatings.
5. Size Information: Destination Name, Destination Distance, Directional Arrow
6. Protection: 3M Smart Shield to protect against fading and to easily remove graffiti.
7. 2 predrilled holes
8. 1 ½" radius corners
9. Color: Green per MUTCD standards or approved other
10. Font: FHWA C Series capital letters with a height of 4". All CAPS
11. Post: Pre-Drilled breakaway square post measuring less than 2.25" to meet MUTCD breakaway requirement.
12. Maximum No. of Destination Signs per post: 3
13. Minimum height from ground level to the bottom of the first sign: 7'
14. Destinations shall be listed in order of distance with the closest destination being at the top.
15. For long names that do not fit on one line use the following approach:
    a) For names, slightly longer that one line, compress the font to no less than 90% of its standard size.
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    c) Use a two-line sign if needed.
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    a) Sign with 1 Line D1-1a
    b) Sign with 2 Lines D1-2a
    c) Sign with 3 Lines D1-3a

Turn Sign (See Figure 5):

Turn Signs shall meet the following standards:

1. Top of Sign should be 1 Identifier Sign, 24' wide by 18" tall
2. The turn sign should be a standard MUTCH M7 Series, option 1 – 7 depending on the situation.
3. Minimum height from the ground level to the bottom of the first sign is 7'.
4. Color: Green per MUTCD standards or approved other
5. Font: FHWA C Series capital letters with a height of 4". All CAPS
6. Post: Pre-drilled breakaway square post measuring less than 2.25" to meet MUTCD breakaway requirement.

7. Arrow Order: Arrange the arrows in the following order:
   a) Top – arrow direction straight (Center Justified)
   b) Middle – Arrow direction left (Left Justified)
   c) Bottom – Arrow direction right (Right Justified)

Community Sign (See Figure 6):

Community Signs shall meet the following standards:

1. **Identifier Sign** is optional.
2. The **Community Turn Sign** should be a standard MUTCH D1-1b Series, one-line sign with a directional arrow, bike symbol, and trail name information.
3. Minimum height from the ground level to the bottom of the first sign is 7'.
4. Color: Green per MUTCD standards or approved other
5. Font: FHWA C Series capital letters with a height of 4". All CAPS
6. Post: Pre-drilled breakaway square post measuring less than 2.25" to meet MUTCD breakaway requirement.

Informational Sign (See Figure 6):

Informational Signs shall meet the following standards:

1. Identifier Logo should be included on local and regional bikeway mapping panels.
2. The bases of design for the **Informational Sign** is a pre-fabricated sign through Poligon Manufacturing from Holland, MI. The sign may be customized to fit each community's needs. For example, the Village of Morton has the existing stone entry signs. The Poligon Sign could be fitted with a stone masonry base to match the other signage in town. See **Appendix C** for a cost quote and contract information. It is recommended that bids from other manufacturers be taken before a final **Informational Sign** is chosen.
3. A smaller double-sided version of this sign is also available if 3 sides are not desirable.

Section 6: Sign Messaging Principles

The following principles are intended to assist each community in making decisions on signs content with respect to providing unity to the overall Bicycle System. These principles are intended to support destinations as well as maximize readability. Superior messaging selections provide a more accurate, consistent, and ultimately useful system. Principles to consider:

1. Destination Signs: Any individual sign should be limited to a maximum of three destinations.
2. Destination Identifiers: Destinations within a corridor should be identified in the following manner for locations. Directly along the bikeway and off-route destinations that are within a few blocks of the corridor, and destinations served by intersecting bikeways.
3. Destination Classes: Once destinations have been identified in No. 2 above they should be assigned the following designations. Final classification shall be determined by each community which is in their best practices and interest. The following are meant as guidelines only:
   a. Primary Destination – Provide signing up to 5 miles
   b. Secondary Destinations – Provide signing up to 2 miles
   c. Tertiary Destination – Provide signing up to 1 mile
4. Endpoints: The bikeway's endpoint destination should be included on conformational signs along the length of the route to communicate the overall extent of the bikeway. This

destination should be included regardless of the distance associated with its designation as a primary, secondary or tertiary destination. For bikeway passing through a downtown area consider listing the downtown as the end point. If a bikeway ends in a location where there is no obvious destination, use the closest major destination on the intersecting bikeway. If there is not intuitive destination, the name of the intersecting street where the bikeway ends may be used as the destination.

5. Decision Signs @Intersections: For decision signs at the intersections with primary bikeways, include on the decision sign the closes major destination.
6. Off Bikeway Destination: Some supported destinationsa may be located within a few blocks, or a small distance, of a designated bikeway, but not directly served by the designated bikeway. In those cases, support the off-route destination with a Directional Sign along the bikeway. Note that the most intuitive connection to the off-route destination may be different depending on the direction the user is coming from and their knowledge of the area.

Section 7: Installation Requirements

Poles: The standard pole for a bikeway guide sign is a 2" square predrilled Unistrut pole. Poles shall not exceed 2.25" in size to meet MUTCD Requirements. All poles shall be installed with breakaway ground connections. Ground installation anchors for existing concrete, new concrete, asphalt, and soil are available for installation. See Appendix B for the Tapco V-Loc method as one potential anchor square post installation type.

Height: As seen in Figures 1-5, the bottom of each sign shall be mounted a minimum of 7' above the existing grade. The 7' height shall be maintained throughout the Regional Bikeway System.

Existing Poles: Bikeway signage shall not be mounted to utility poles or traffic signal mast arms. Other existing poles may be used as approved by the pole's owner.

Section 8: Phasing Strategy

The implementation strategy presented here is a plan for realizing the Non-Motorized Wayfinding Signage System. It includes a recommended phasing strategy for implementing the plan in logical phases as funding becomes available.

Implementation of the Non-Motorized Wayfinding Signage Plan is proposed to occur in two phases. The implementation is divided into logical phases based on the sequence in which a user would encounter the signage when entering the area.

Phase 1A: Provide the **Directional, Confirmational**, and **Turn Signs** between each community.
Phase 1B: Provide the **Directional, Confirmational**, and **Turn Signs** within each community.
Phase 1A and 1B could occur in any order or concurrently.

Phase 2: Phase 2 completes the wayfinding system by installing the **Community** and **Informational Signs**. These signs announce one's arrival and introduces the image and brand of the wayfinding signage. These signs provide information about each Community's attractions, identify where they are located and pique the readers interest in exploring what the area has to offer.

Successful implementation of the Plan involves establishing responsibilities for overall project coordination, as well as sign fabrication, installation and maintenance.

Section 9: Cost Estimate

Budgetary costing data is included in this report and is based on the Design Standards and Signage Plan. The cost information should only be used for budgeting purposes and not necessarily for determining actual bid prices. The following estimates are subject to change based on final design, manufacturing, and installation.

Costs include the materials, fabrication and installation of the various sign types. Unit costs are provided for each sign type. Concept budgets are provided for the overall Signage Plan.

Individual Sign Costs:

Sign Type	*Unit Cost*
Directional *(3 lines)*	$1,000
Confirmation *(3 lines)*	$1,000
Turn	$500
Community	$300
Informational	$10,000

Overall Wayfinding Signage Plan Cost: The overall Signage Plan cost also includes a 20% contingency which could include expenses such as construction administration, mobilization, locating the signs in the field, locating utilities, unknown complications, etc.

Sign Type	*Quantity*	*Concept Budget*
Directional	50	$50,000
Confirmation	36	$36,000
Turn	34	$17,000
Community	Optional	N/A
Informational	9	$90,000
	Subtotal:	$193,000
	20% Contingency	$38,600
	TOTAL CONCEPT BUDGET	$231,600

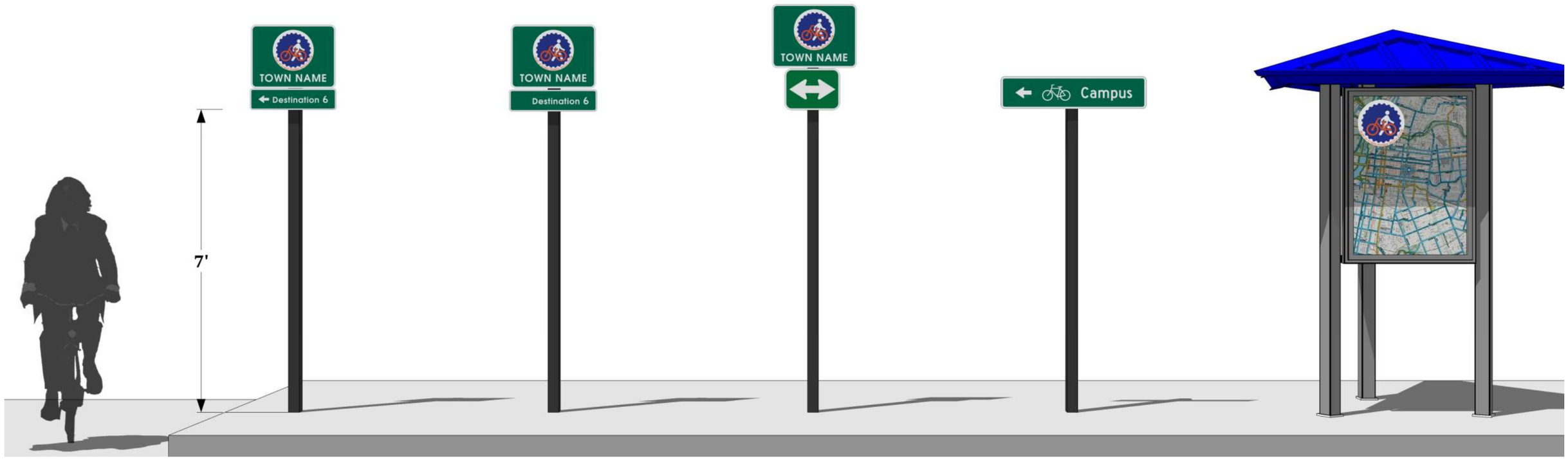
The overall Wayfinding Signage Plan cost, including contingency from above, can be further separated into Phases as follows:

Phase	*Concept Budget*
Phase 1A	$32,400
Phase 1B	$91,200
Phase 2	$108,000
TOTAL CONCEPT BUDGET	$231,600

Section 10: Coordination with Other Agencies & Communities

Once this wayfinding system is adopted it is highly encouraged to determine ways to reach out to other communities and agencies to adopt the system, or something very similar, to thus create not only a bikeway finding system for the 4 communities involved with this study, but throughout the Tri-county Area (Tazewell, Woodford, & Peoria).

FIGURE INDEX



DIRECTIONAL SIGNAGE

CONFIRMATIONAL SIGNAGE

TURN SIGNS

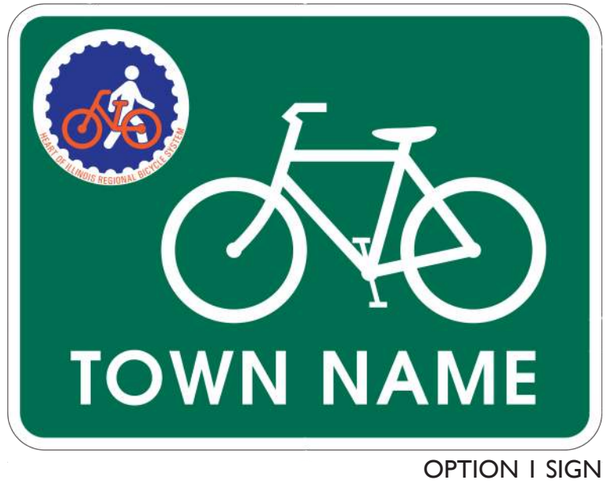
COMMUNITY SIGNS

INFORMATIONAL SIGN

FIGURE 1 - CUSTOM IDENTIFIER SIGN

LOGO OPTION - 1

LOGO OPTION - 2



OPTION 1 SIGN

OPTION 2 SIGN

OPTION 3 SIGN

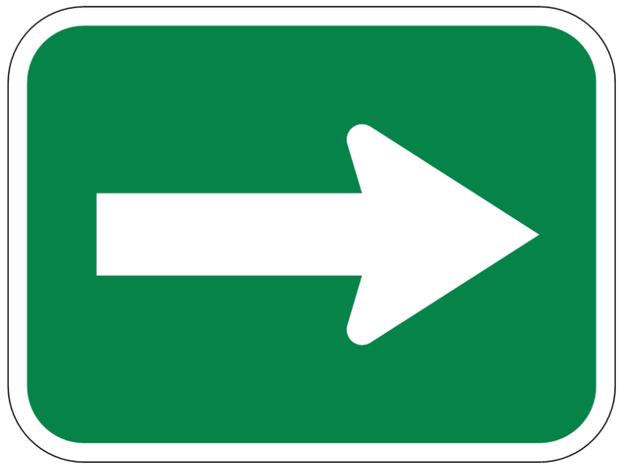
OPTION 4 SIGN

FIGURE 2 - IDENTIFIER SIGN

FIGURE 3 - DIRECTIONAL SIGN

FIGURE 4 - CONFORMATIONAL SIGN

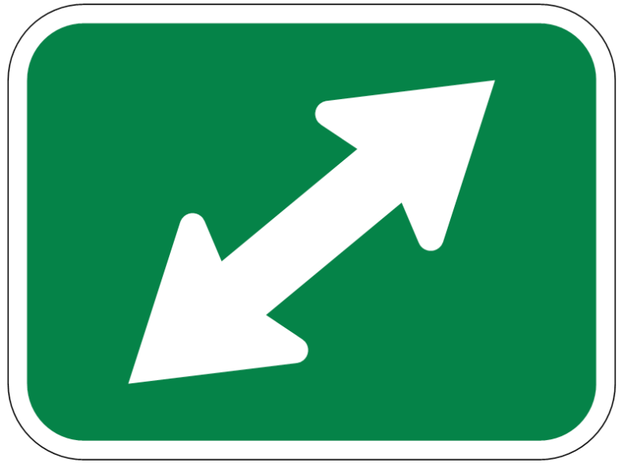
M7-1L



M7-1R

M7-2

M7-3L



M7-3R

M7-4L

M7-4R

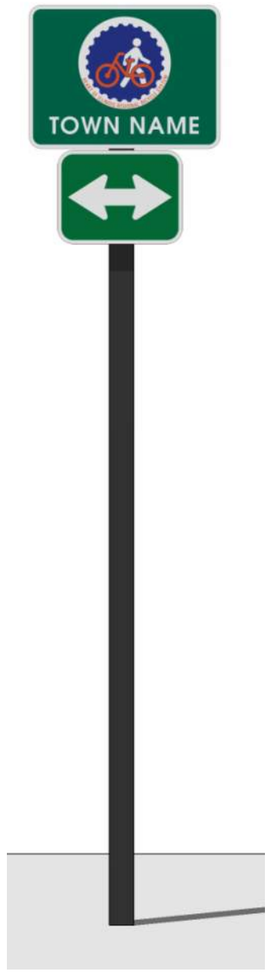


FIGURE 5 - TURN SIGN

D1-1b

BICYCLE DESTINATION (1 LINE)

TYPE E - COMMUNITY SIGNAGE

TYPE F - INFORMATIONAL SIGNAGE

APPENDIX INDEX

IMPROVE SIGNAGE FOR BICYCLE TRANSPORTATION

ACTION	RESPONSIBLE ENTITY	TIMEFRAME
Promote regional collaboration on developing wayfinding systems in the region	TCRPC, local governments	Ongoing
Establish wayfinding systems that are compatible throughout the region	TCRPC, local governments	Ongoing
Promote the installation of signage notifying motorists of bicycle use on roadways that have or are planned to have appreciable cyclist use	TCRPC, local governments	Ongoing
Establish "BIKES MAY USE FULL LANE" signs in places where cyclists logically would be riding near the center of the lane.	TCRPC, local governments	Ongoing
For roads having appreciable cyclist use, a history of car-bike conflicts, and lane widths of 14 feet or more, use the word-only "STATE LAW – 3 FEET MIN TO PASS BICYCLES" sign.	TCRPC, local governments	Ongoing
For roads having appreciable cyclist use, a history of car-bike conflicts, and lane widths less than 14 feet, use the word-only "STATE LAW – 3 FEET MIN TO PASS BICYCLES" sign or the "CHANGE LANES TO PASS BICYCLES" sign.	TCRPC, local governments	Ongoing

Wayfinding is an emerging issue in the Greater Peoria area. In 2016 there were two separate wayfinding studies underway: one for the City of Peoria and one for the Tazewell County communities of Pekin, East Peoria, Morton and Washington. As the studies are completed and the implementation of wayfinding systems begin, TCRPC will look to work with these communities and others throughout the region to develop a wayfinding system that is regionally coherent.

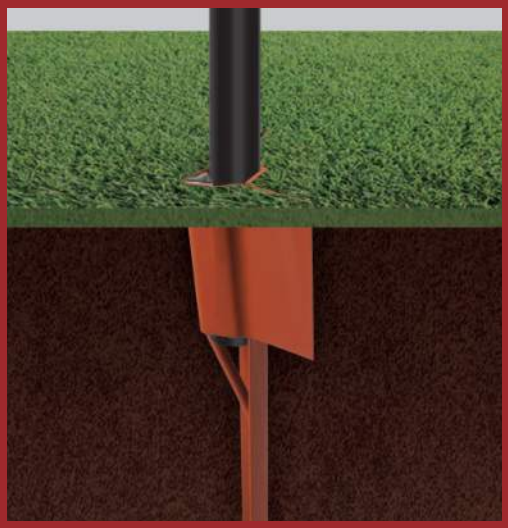
Ride Illinois is the statewide bicycle advocacy group in Illinois, and it completed a technical brief in 2015 addressing **motorist-directed signage** for sharing the road with bicycles. The purpose of the brief was to identify preferred signage that could be recommended for consistent use in Illinois. The table directly above includes the recommendations from this technical brief. The brief is available online at http://rideillinois.org/wp-content/uploads/2015/12/safersignagetechnicalbrief.pdf.

Appendix A

Appendix B: Tapco V-Loc Anchoring System

TAPCO®

V-Loc® Product Guide



New Breakaway Sign

V-Loc® anchor allows you to extend your sign maintenance budget!

Permanent & Reusable Install:
- in Concrete
- in Asphalt
- in Soil

Versatile Anchoring Sockets for:
- Signs
- Mailboxes
- Flexposts
- Fences
- Markers

Why Breakaway Sign Supports are Required!

Rigid objects close to a roadway can become deadly hazards when struck by a vehicle that strays off the pavement. Supports for road signs frequently placed close to the roadway are hazards if they are not designed, manufactured and constructed to break away upon impact. Even relatively small and innocent looking road sign supports can be deadly if they are not designed to break away. The Manual on Uniform Traffic Control Devices (MUTCD), which is the national standard used for all roads open to public travel, states in Section 2A-19:

"Ground-mounted sign supports shall be breakaway, yielding or shielded with a longitudinal barrier or crash cushion if within the clear zone."

This requirement applies to all roads, whether publicly or privately owned. Although state highway agencies are generally in compliance already, the Federal Highway Administration (FHWA) is concerned that many local agencies may not be aware of this requirement.

Crash Tested & Approved!

V-Loc® is NCHRP 350 approved, AASHTO recommended & Federal Highway Administration – Clear Zone Compliant.

The FHWA has ruled (MUTCD Section 2A-19) that all roadside sign supports in the clear zone shall (must) be breakaway, yielding or shielded. This requirement applies to supports on all roads open to public travel, whether publicly or privately owned.

Post Regulations

MUTCD: All non-breakaway sign supports shall be replaced by January 2013

The FHWA realizes that no agency can inventory, inspect, design, and replace non-breakaway sign supports overnight. The easiest way to accomplish this is to begin using breakaway supports when installing new signs or replacing damaged supports. All non-breakaway sign supports within the clear zone of roads posted at 50 mph or greater shall be replaced by January 2013. All new sign posts must be breakaway on all speed roads. Thus you can save yourself time and money by using only compliant supports NOW for new installations, as well as when replacing existing or damaged sign post supports.

Which Sign Supports are Breakaway

FHWA policy requires that all highway appurtenances, including sign supports, used on the National Highway System, meet performance criteria contained in the National Cooperative Highway research Program (NCHRP) Report 350, Recommended Procedures for the Safety Performance Evaluation of Highway Features. All of TAPCO's V-Loc® Sign Sockets for round, square and u-channel posts are NCHRP350-approved Breakaway Supports.

V-Loc® sockets also mount flush to the ground, eliminating the chance of causing vehicle roll-overs and the risk of unwanted, costly liability.

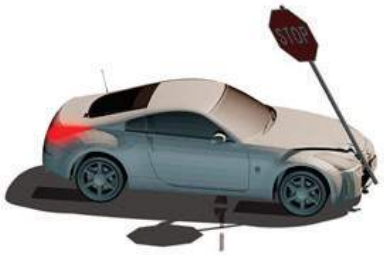
Are V-Loc® Sockets Reusable

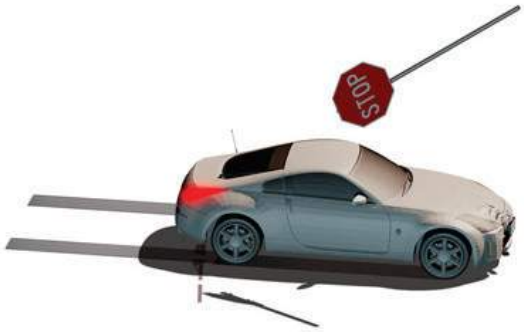
V-Loc® Sockets are reusable after knockdowns. Simply put a new post in the socket and drive in a new wedge. Cut down on your replacement costs and exposure of your workforce to traffic.

What about Mailbox Supports

All of TAPCO's V-Loc® Sockets and Supports for Single, Double and Multiple Mailboxes are NCHRP350-approved Breakaway Supports. Several States have already specified them for their roadways. Contact TAPCO for additional information on V-Loc® Supports.

Please contact TAPCO today to ensure that your sign and mailbox posts will conform to FHWA regulations.

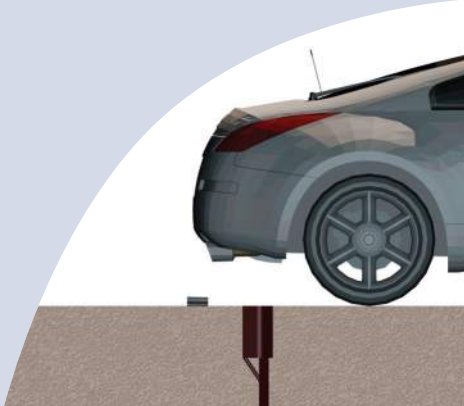




V-Loc® post anchor's unique, patented yield-and-release system allows posts to release or break away at ground level, so errant vehicles pass over the anchor, minimizing the potential for punctured tires and vehicle roll-overs.

For more information on safer sign supports
visit: http://safety.fhwa.dot/dog/roadway_dept/safersigns.htm

For more information on V-Loc® Sign and Mailbox Support Systems
visit: www.tapconet.com/vloc.html



Decorative Aluminum Poles with V-Loc® Post Anchors

When pairing decorative aluminum poles with TAPCO's V-Loc® post anchors, you get both the ease of installation and the safety of a breakaway anchor system. V-Loc® is the state of the art, reusable breakaway anchor, allowing you to replace posts literally in minutes. It anchors posts for signs, mailboxes and other applications. The V-Loc® anchor socket can be installed in concrete, asphalt or dirt safely by one person in a matter of minutes either by hand or power driver. Once the V-Loc® anchor is installed, you simply insert your post and drive in the patented wedge, locking the post into the anchor without the need for any additional hardware. V-Loc® fins require no concrete in soil. It's simple, solid and safe. Each V-Loc® includes a locking wedge easily replaced after a vehicle impact. Other diameter post and ground settings are available.

23-VR1, for post with 2 3/8" O.D. (concrete)	034-00012
23-VR3, for post with 2 3/8" O.D. (soil)	034-00014
30-VR1, for post with 3" O.D. (concrete)	034-00116
30-VR3, for post with 3" O.D. (soil)	034-00002
40-VR1, for post with 4" O.D. (concrete)	034-00117
40-VR3, for post with 4" O.D. (soil)	106782

TAPCO MADE

REUSABLE

Decorative Breakaway Pole Packages

Fluted decorative poles for decorative way finding signage, BlinkerSign® LED signs. 4" pole required for RRFB systems

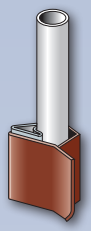
12' x 3" decorative pole package, anchor bolts (for concrete)	203-00181
12' x 3" decorative pole package, V-Loc® anchor (for soil)	203-00182
12' x 4" decorative pole package, V-Loc® anchor (for soil)	203-00183
12' x 4" decorative pole package, anchor bolts (for concrete)	203-00184
15' x 4" decorative pole package, anchor bolts (for concrete)	203-00185

V-Loc® Post Anchors for Round Poles

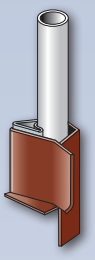
We stock a variety of round poles for your new installations.

Pole Outside Diameter (O.D.)	Model Number	Weight (Lb.)	Leg Length (In.)	SKU Number
Existing Concrete Installation V-Loc® Post Anchors				
2	20-VR1 1	5.00	8	034-00040
2 3/8	23-VR1 1	5.00	8	034-00012
2 7/8	28-VR1 1	6.40	8	034-00028
3	30-VR1 1	6.40	8	034-00116
4	40-VR1 1	7.00	8	034-00117
New Concrete Installation V-Loc® Post Anchors				
2 3/8	23-VR1P 2	5.50	12	034-00082
Asphalt Installation V-Loc® Post Anchors				
2 3/8	23-VR1A 3	11.00	18	034-00122
Compact Soil Installation V-Loc® Post Anchors				
2	20-VR3 4	14.80	30	034-00041
2	20-VR3B 4	15.70	30	034-00081
2 3/8	23-VR2 5	12.80	24	034-00003
2 3/8	23-VR2B 4	13.70	24	034-00083
Loose Soil Installation V-Loc® Post Anchors				
2 3/8	23-VR3 5	14.80	30	034-00014
2 3/8	23-VR3B 5	15.70	30	034-00085
2 3/8	23-VR4 5	16.80	36	034-00113
2 7/8	28-VR3 5	20.60	36	034-00030
2 7/8	28-VR3B 5	22.00	36	034-00087
3	30-VR3 5	21.00	36	034-00002
3	30-VR3B 5	22.00	36	034-00088

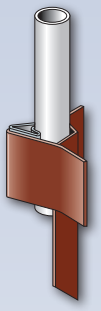
1 **Existing Concrete Installation V-Loc® Post Anchors**
(VR1 models: concrete must be bored out)



2 **New Concrete Installation V-Loc® Post Anchors**
with longer leg, and bottom plate to prevent wet concrete migration
(VR1-P models)



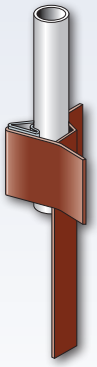
3 **Asphalt Installation V-Loc® Post Anchors**
with chisel-point leg for driving through asphalt
(all models with an 'A' suffix)



4 **Clean-out Bar Installation V-Loc® Post Anchors**
with ¾" x 7" bar to break up soil for easy removal
(all models with a 'B' suffix)

Clean-out Bar Installation V-Loc® Post Anchors
with ¾" x 7" bar to break up soil for easy removal
(all models with a 'B' suffix)

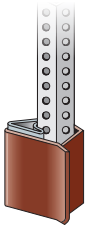
5 **Soil Installation V-Loc® Post Anchors**
(VR2 models for standard soils, and VR3 models for softer soils and heavier post/wind loads)



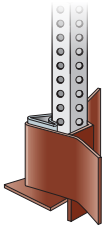
V-Loc® Square Post Anchors

TAPCO MADE

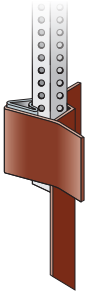
PATENT #5,749,180



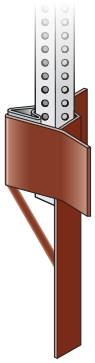
1 **Existing Concrete Installation V-Loc® Post Anchors** (VS1 models: concrete must be bored out)



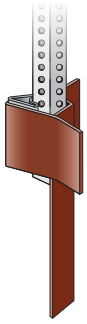
2 **New Concrete Installation V-Loc® Post Anchors** with longer leg, and bottom plate to prevent wet concrete migration (VS1-P models)



3 **Asphalt Installation V-Loc® Post Anchors** with chisel-point leg for driving through asphalt (all models with an 'A' suffix)



4 **Clean-out Bar Installation V-Loc® Post Anchors** with ¾" x 7" bar to break up soil for easy removal (all models with a 'B' suffix)



5 **Soil V-Loc® Post Anchors** (VS2 models for standard soils, and VS3 models for softer soils and heavier post/wind loads)

Post Dimensions	Model Number	Weight (Lb.)	Leg Length (In.)	SKU Number
Existing Concrete Installation V-Loc® Post Anchors				
1 ¾	175-VS1 1	4.40	8	034-00031
2	200-VS1 1	5.00	8	034-00007
2 ¼	225-VS1 1	5.00	8	034-00034
2 ½	250-VS1 1	6.40	8	034-00037
3	300-VS1 1	6.40	8	034-00089
New Concrete Installation V-Loc® Post Anchors				
1 ¾	175-VS1P 2	4.90	12	034-00090
2	200-VS1P 2	5.50	12	034-00094
2 ¼	225-VS1P 2	5.50	12	034-00097
Asphalt Installation V-Loc® Post Anchors				
1¾	175-VS1A 3	8.90	18	034-00119
2	200-VS1A 3	9.50	18	034-00120
Compact Soil Installation V-Loc® Post Anchors				
1 ¾	175-VS2 5	10.00	24	034-00032
2	200-VS2 5	12.80	24	034-00200
2	200-VS2B 4	15.70	24	034-00095
2 ¼	225-VS2 5	12.80	24	034-00035
2 ½	250-VS2 5	18.10	30	034-00038
3	300-VS2 5	22.00	30	034-00106
Loose Soil Installation V-Loc® Post Anchors				
1 ¾	175-VS3 5	11.60	30	034-00033
1 ¾	175-VS3B 4	12.50	30	034-00091
2	200-VS3 5	14.80	30	034-00018
2	200-VS3B 4	15.70	30	034-00096
2	200-VS4 5	16.50	36	034-00107
2 ¼	225-VS3 5	14.80	30	034-00036
2 ¼	225-VS3B 4	15.70	30	034-00098
2 ½	250-VS3 5	20.60	36	034-00039
3	300-VS3 5	24.00	36	034-70000

V-Loc® U-channel Post Anchor and Adapter Kits

TAPCO MADE

PATENT #5,749,180

Each kit includes: Model 19 V-Loc® D, locking wedge C, and anchor adapter B. U-channel post A (sold separately).

	Outside Diameter (OD) x Adapter Length	Model Number		Weight	Leg Length	SKU Number
Existing Concrete	1.90" x 12"	19-VR1U	1	6.65 lb.	8"	034-00013
Compact Soil	1.90" x 12"	19-VR2U	5	12.80 lb.	24"	034-00001
Loose Soil	1.90" x 12"	19-VR3U	5	14.90 lb.	30"	034-00015
New Concrete	1.90" x 15"	19-VR1PU	2	7.70 lb.	12"	034-00092
Loose Soil	1.90" x 15"	19-VR3BU	4	17.65 lb.	30"	034-00093

B V-Loc® U-channel Post Anchor Adapters

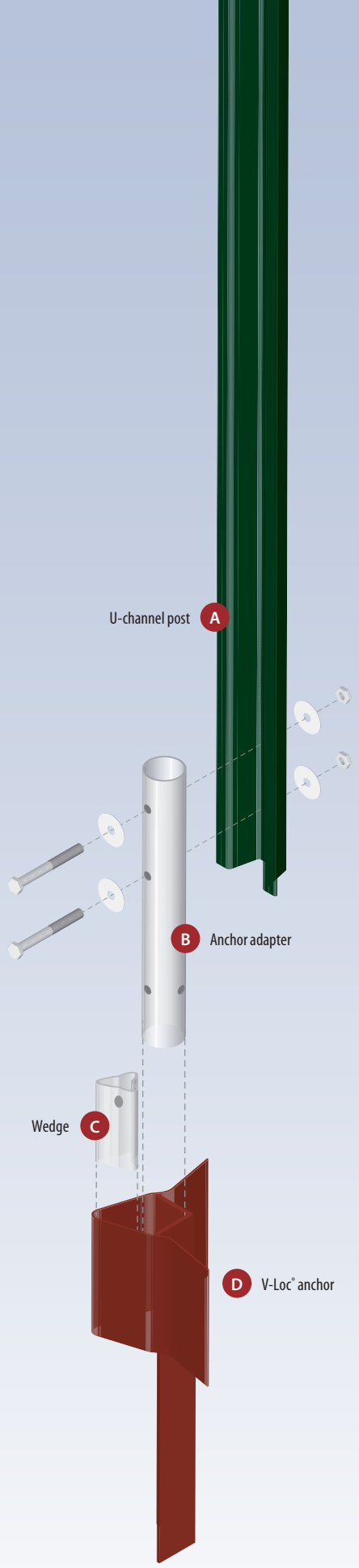
For use with 2-3 lb/ft. U-channel post A (sold separately). Adapters are punched with four holes and include (1) anti-rotation tek screw, (2) 5⁄16" x 3" grade 5 hex-head bolts, (2) 5⁄16" lock nuts and (4) 5⁄16" flat washers, all zinc-plated. 19-UCA Adapters fit all Model 19 V-Loc® Sockets.

Adapter Model	Weight	Post Adapter OD	Wall Thickness x Length	SKU Number
19-UCA-12	2.25 lb.	1.90"	.109" x 12"	034-00064
19-UCA-15	2.80 lb.	1.90"	.109" x 15"	034-00022
19-UCA-18	3.30 lb.	1.90"	.109" x 18"	034-00024

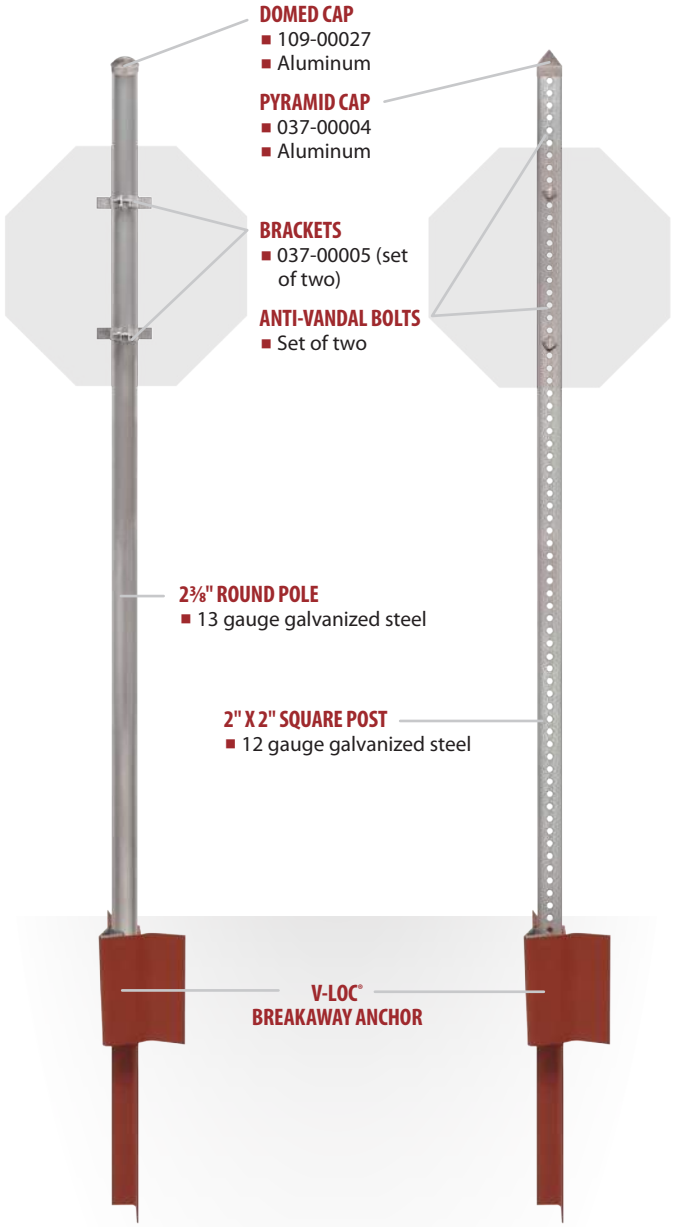
D V-Loc® U-channel Post Anchors

VR1 models are for installing in existing concrete (boring required). VR1P models are for installing into new concrete, with a bottom plate to prevent concrete migration. VR2 models are for standard soils, and VR3 models for softer soils and heavier post/wind loads. 'B' models have a clean-out bar for easy soil removal.

	Models (w/wedge) for 1.9" Round Posts		Weight	Outside Diameter (OD)	Leg Length	SKU Number
Existing Concrete	19-VR1 socket	1	4.40 lb.	1.90"	8"	034-00025
New Concrete	19-VR1P socket	2	4.90 lb.	1.90"	12"	034-00023
Asphalt	19-VR1A socket	3	9.00 lb.	1.90"	18"	034-00121
Compact Soil	19-VR2 socket	5	10.00 lb.	1.90"	24"	034-00026
Compact Soil	19-VR2B socket	4	10.90 lb.	1.90"	24"	034-00049
Loose Soil	19-VR3 socket	5	11.60 lb.	1.90"	30"	034-00027
Loose Soil	19-VR3B socket	4	14.85 lb.	1.90"	30"	034-00050



Standard Pole Packages

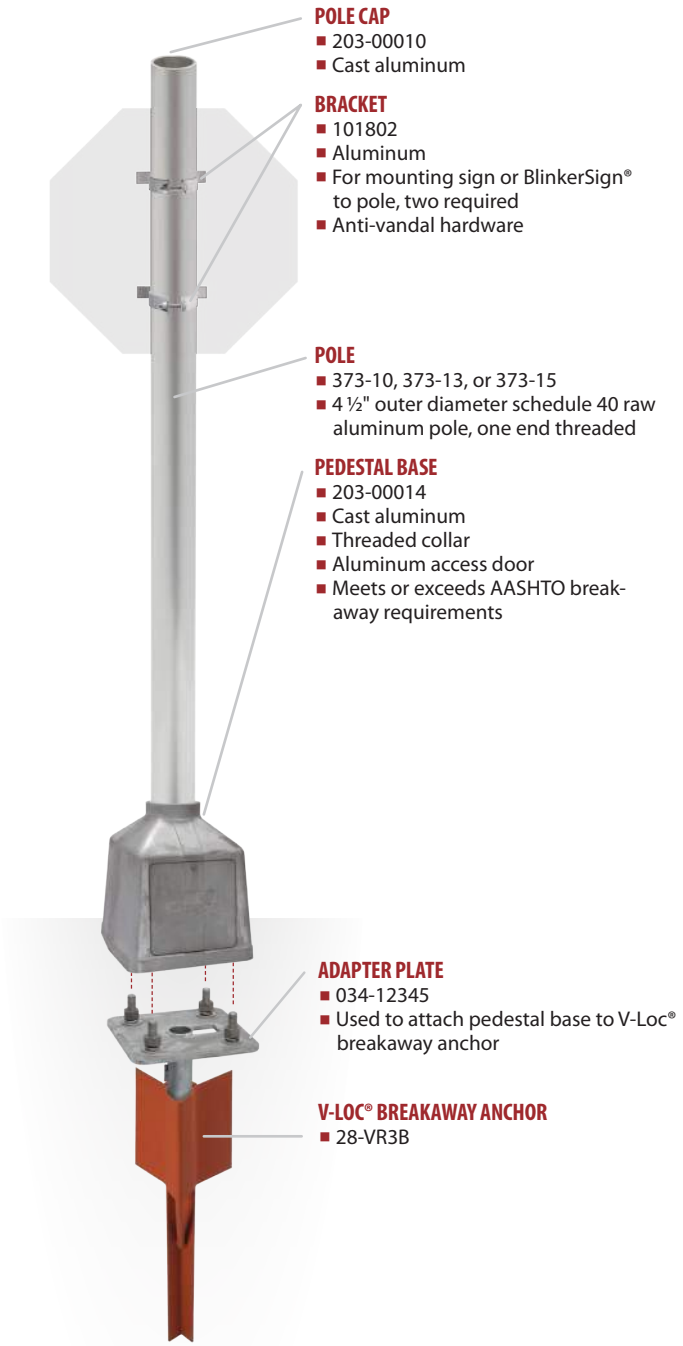


Standard Breakaway Pole Packages

An economical standard breakaway pole for street signs or smaller BlinkerSign® LED signs

10' round pole package, V-Loc® breakaway anchor	373-90001
12' round pole package, V-Loc® breakaway anchor	373-90004
10' square post package, V-Loc® breakaway anchor	373-90002
12' square post package, V-Loc® breakaway anchor	373-90005

Heavy Duty Pole Packages



Heavy Duty Double Breakaway Pole Packages With V-Loc® Breakaway Anchor

A double breakaway system for large signage, BlinkerSign®, and BlinkerBeacon™. Soil installation.

10' heavy duty pole package, V-Loc® breakaway anchor	2180-00220
13' heavy duty pole package, V-Loc® breakaway anchor	2180-00221
15' heavy duty pole package, V-Loc® breakaway anchor	2180-00222

Replacements save time & money!

Other makes of anchors deform, break or become unearthed upon impact, resulting in time-consuming & labor-intensive removal and re-installation of a new anchor. But with V-Loc® your post replacements are a snap!

No need to pound a new anchor, dig, core or re-set concrete. You simply insert a new post and hammer in a new wedge. Complete in minutes!

Theirs

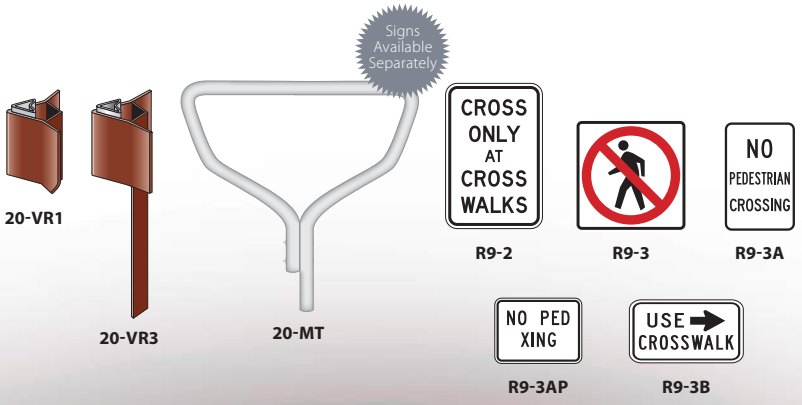
V-Loc®

Vise-Loc Stabilizer Bolt grips posts in severe wind conditions and with heavier loads. It is Standard on all square model V-Loc® post anchors; Optional on all round and u-channel models for an additional charge.

Extractor Hole allows for easier removal of the V-Loc® from the ground with the use of a clevis and hook, not included. Ideal for temporary applications such as work zones. Optional on all V-Loc® models for an additional charge.

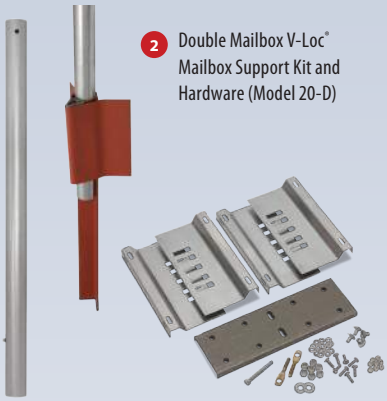
Pedestrian Handrail Kits & Signs

Description	Weight (Lb.)	SKU Number
V-Loc® Pedestrian Handrail for concrete installation		
Kit Includes: (1) 20-VR1 Concrete Model V-Loc®, wedge and (1) 20-MT formed steel galvanized tube.	35.00	034-00067
V-Loc® Pedestrian Handrail for earth or asphalt installation		
Kit Includes: (1) 20-VR3 earth /asphalt model V-Loc®, wedge and (1) 20-MT formed steel galvanized tube.	44.80	034-00068

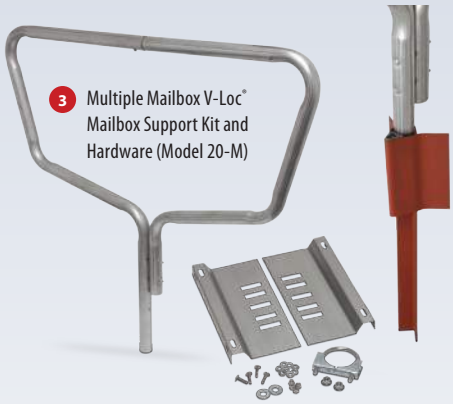


V-Loc® Breakaway Anchor Mailbox Support Kits & Hardware

1 Single Mailbox V-Loc® Mailbox Support Kit and Hardware (Model 20-S)



2 Double Mailbox V-Loc® Mailbox Support Kit and Hardware (Model 20-D)



3 Multiple Mailbox V-Loc® Mailbox Support Kit and Hardware (Model 20-M)

Includes V-Loc® Mailbox Support Systems for 2" O.D. pole and wedge.

	Model Number	Weight (Lb.)	Outside Diameter (O.D.)	Leg Length (In.)	SKU Number
New Concrete	20-VR1	5.00	2	8	034-00040
Compact Soil	20-VR3	14.80	2	30	034-00041
Compact Soil	20-VR3B	15.70	2	30	034-00081

Model Number	Weight (Lb.)	Description	SKU Number
1 Single Mailbox V-Loc® Mailbox Support Kits & Hardware			
20-S Kit	Mailbox NOT Included	**Single Kit Includes:** (1) 2"O.D. 14 ga. post, 48" height with tek screw (Tek screw prevents rotation of post), (1) 20-VR3 V-Loc® socket, (1) SW-1 wedge, (1) MBB-S single mailbox bracket for one, #1 standard or one #1A rural mailbox, 24 lb.	034-00211
20-S2 Kit	Mailbox NOT Included	**Single Large Kit Includes:** (1) 2" O.D. 14 ga. post, 48" height with tek screw (Tek screw prevents rotation of post), (1) 20-VR3 V-Loc® socket with SW-1 wedge, (1) MBB-4 single mailbox bracket for one large #2, standard rural mailbox, 27 lb.	034-00051
MBB-S	2.30	**Single Mount Bracket #1 or #1A:** Packaged with all parts and hardware to mount one #1 or #1A standard rural mailbox on a Model 20-S single mailbox support.	034-00044
MBB-4	3.50	**Single Mount Bracket Large #2:** Parts and hardware to mount one #2 large rural mailbox on any single support tube.	034-00047
20-ST	6.80	**Steel Galvanized Tube:** 2" O.D. x 48" long, 14 gauge	034-00042
2 Double Mailbox V-Loc® Mailbox Support Kits & Hardware			
20-D	Mailbox NOT Included	**Double Kit Includes:** (1) 2" O.D. 14 ga. Post, 48" height with tek screw. (Tek screw prevents rotation of post), (1) 20-VR3 V-Loc® socket with SW-1 wedge, (1) MBB-D double mailbox bracket assembly, for two #1standard or two #1A rural mailboxes, 26 lb.	034-00212
MBB-D	4.50	**Double Mount Bracket with instructions:** Packaged with all parts and hardware to mount two #1 or #1A standard rural mailboxes on Model 20-D double mailbox support.	034-00045
20-ST	6.80	**Steel Galvanized Tube:** 2" O.D. x 48" long, 14 gauge	034-00042
3 Multiple Mailbox V-Loc® Mailbox Support Kits & Hardware			
20-M Kit	Mailbox NOT Included	**Multiple Kit Includes:** (1) 20-VR3 V-Loc® socket with SW-1 wedge, (1) 2" O.D. 14 ga. formed post, 48" height, with tek screw, (Tek screw prevents rotation of post), (5) MBB-M mailbox bracket kits, to mount, five single #1 standard or four #1A rural mailboxes, 50 lb.	034-00213
20-M2 Kit	Mailbox NOT Included	**Multiple Large Kit Includes:** (1) 20-VR3 V-Loc® socket with SW-1 wedge, (1) 2" O.D. 14 ga. formed post, 48" height, with tek screw (Tek screw prevents rotation of post), (4) MBB-5 bracket kits for four large #2 standard rural mailboxes, 54 lb., Standard #1, #1A rural mailboxes and large #2 rural mailboxes can be intermixed on the multiple support.	034-00052
MBB-M	2.30	**Multiple Mount Bracket for #1 or #1A Mailbox with instructions:** Individually packaged with all parts and hardware to mount one #1 or #1A standard rural mailbox on Model 20 multiple mailbox support. The Model 20 multiple supports up to five #1mailboxes or four #1A mailboxes, MBB-M	034-00046
MBB-5	3.60	**Multiple Mount Bracket for a #2 mailbox with instructions:** All parts and hardware to mount one #2 large rural mailbox on the V-Loc® multiple support. The V-Loc® multiple support will accommodate up to 4 MBB-5 bracket kits.	034-00048
20-MT	23.80	**Steel Galvanized Tube:** 2" x 14 gauge, formed	034-00043

Type 1 and 2 Mailboxes

Type 1 aluminum, 19"L x 7"W x 9"H	034-00115
Type 2 aluminum, 21"L x 8"W x 11"H	166-00029

034-00115

166-00029

V-Loc® Replacement Parts & Extended Support Kits

The unique V-Loc® wedge 3 is engineered to collapse when stressed by vehicle impact. Keep extra wedges on hand for post replacement after knock-downs. For high wind speed areas and heavier post stresses, the use of a Wedge Insert 4 is recommended. Use the handy Cleanout Trowel 2 for faster cleanout of soil after driving V-Loc® post anchors. The Closure Cap 1 conceals the socket between uses.

	Item Name	Description	Weight (lb.)	Item #
1	Closure cap	Steel Plate with retainer bar	2.0	034-00099
2	Trowel	Long-handled trowel w/ plastic grip	0.5	3290-00001
3	Wedge	Galvanized Steel Wedge for V-Loc® post anchors	0.75	034-00004
4	Insert	For High Stress Applications	0.125	2986-00001
5	Plumb tool	To hold V-Loc® while pouring concrete	0.40	034-00146
	Bottom post cover	Fits around 2 ⅜" pole to cover V-Loc®	0.50	101747
6	Levels	9" - plastic	1.00	034-00147

Extended Mailbox Support Posts and Off Road Mailbox Post

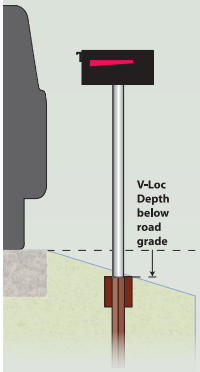
Post is longer so it may be anchored at elevations below road grade, to achieve a mailbox base height of 42" to 48" (recommended).

Post Model	Length	Drop from road grade	Support Type	Weight (Lb.)	Item #
20-ST+6"	54"	Up to 6"	Single, with tek screw	7.5	034-00079
20-ST-60	60"	Up to 12"	Single, with tek screw	8.5	034-00056
20-MT+6"	54"H	Up to 6"	Multiple, with tek screw	25.5	034-00076
34-208 (Off Road Post)	70"H x 24"W	Up to 22"	Single, no tek screw	8.6	034-00208

Extended Support Post Kits

Kits include One V-Loc® Model 20-VR3, Wedge, Bracket Kit(s) and Extended Post with Tek Screw.

Kit #	Support Type	Bracket Kits	Accommodates:	Drop from road grade	Weight (Lb.)	Item #
20-S +6"	Single	One MBB-S	One #1 or One #1A	Up to 6"	24	034-00077
20-S2 +6"	Single	One MBB-4	One large #2	Up to 6"	24	034-00078
20-S-60	Single	One MBB-S	One #1 or One #1A	Up to 12"	25	034-00058
20-S2-60	Single	One MBB-4	One large #2	Up to 12"	25	034-00057
20-D +6"	Single	One MBB-D	Two #1 or Two #1A	Up to 6"	25	034-00073
20-D-60	Double	One MBB-D	One large #2	Up to 12"	26	034-00062
20-M +6"	Multiple	Five MBB-M	Five single #1 or Four #1A	Up to 6"	60	034-00074
20-M2 +6"	Multiple	Four MBB-5	Four large #2	Up to 6"	65	034-00075

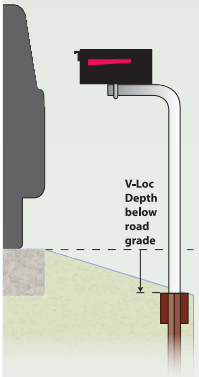


Extended Height Posts & Kits

These longer V-Loc® support posts and kits are intended for installations where the road shoulder drop-off necessitates additional elevation to attain the desired mailbox position.

Choose the post length to match the difference between the road grade and the top of the mounted V-Loc®. Assume a minimum of 6" post insertion into V-Loc®.

Posts that are slightly too long can be inserted deeper into the V-Loc® Socket, or trimmed to length using all proper safety precautions.



Off Road Post

This L-shaped V-Loc® mailbox support post is intended for installations where the road shoulder drop-off necessitates additional elevation and lateral offset, to attain the desired mailbox position.

Choose the post length to match the difference between the road grade and the top of the mounted V-Loc®. Assume a minimum of 6" post insertion into V-Loc®.

Posts that are slightly too long can be inserted deeper into the V-Loc® Socket, or trimmed to length using all proper safety precautions.

V-Loc® Installation & Starter Kits

V-Loc® Power Installation Kit

Includes:

- Clean-Out Trowel (3290-00001)
- Wedge Puller HD (034-00017)
- Driver Shank (Varies)
- Drive Cap (034-00011)

V-Loc® Power Installation Kit	034-00400

V-Loc® Manual Installation Kit

Includes:

- Clean-Out Cap (034-00011)
- Clean-Out Trowel (3290-00001)
- Heavy Duty Wedge Puller (034-00017)

V-Loc® Manual Installation Kit	034-00401

V-Loc® Drivers, Pullers & Accessories

Wedge Tools

Light duty (LD) and Heavy Duty (HD) parts are not interchangeable.

Wedge Pullers, Tips and Nuts	Weight (Lb.)	Part #
WP-1 Light Duty Wedge Puller	7.00	034-00005
WH-1 Light Duty Replacement Tip	0.20	034-00008
WN-1 Light Duty Replacement Nut	0.10	034-00059
WP-2 Heavy Duty Wedge Puller	13.00	034-00017
WH-2 Heavy Duty Replacement Tip	0.30	034-00016
WN-2 Heavy Duty Replacement Nut	0.30	034-00060

Driver Shank Tools

Choose Hex size to match driver (Hex X Shank)

Model	Hex Size	Weight (Lb.)	Part #
(34-20)	⅞" x 3 ¼"	5.00	034-00020
(34-9)	⅞" x 4 ¼"	6.00	034-00009
(34-19)	1" x 4 ¼"	6.00	034-00019
(34-21)	1 ⅛" x 6"	8.00	034-00021
(34-6)	1 ¼" x 6"	8.00	034-00006

The Driver Shank Tool attaches to the Power Drive Head (below) to power drive V-Loc® post anchors.

Driver Caps & Heads

Item Name		Weight (Lb.)	Part #
PH-1 V-Loc® Power Drive Head for use with hydraulic & gas powered tools to drive V-Loc® post anchors		7.50	034-00010
HD-1 Hand Drive Cap for use with sledge to hand drive V-Loc® post anchors		16.50	034-00011

Gas-Driven Tools

Item Name	Part #
Cobra Pro Gas Breaker	340-00002
Cobra Combi Driver/Breaker	340-00003
Shank, for Cobra Pro only	2923-00001
1¾" Drive Head for Cobra Pro only	2923-00002
2" Drive Head for Cobra Pro only	2923-00003

Flexible Spring Post Systems & Bollard Options

Flexible Spring Post Systems

These flexing post base systems are the long-term solution for high traffic areas, eliminating the ongoing expense of sign repair and replacement. **Available in concrete, asphalt & natural ground models, they are ideal for busy parking lots and other high traffic areas.** Deflecting upon vehicle impact to help prevent damage to pavement and vehicles, they spring back to vertical. They are easy to install with simple tools. Post drilling for signs is required; or purchase brackets, available separately.

Features:

- 9.5" square, 7 gauge steel base plate
- Carbon steel torsion spring with tear-away bolts
- Impact resistant, with 360° of flexibility
- Withstands high winds
- 6' SS20 galvanized steel post, or black powder-coated post

Systems include:

- 6-foot, 1 ⅝" O.D. flexing post, 78" overall height
- Base Plate and Flexing Spring
- Four ½" stainless bolts, washers, nylon insert lock nuts

Options:

- Asphalt Installation Model includes asphalt hardware
- Concrete Installation Model includes four concrete-expandable steel studs

Item Name	Part #	Weight (Lb.)
Asphalt Model, Galvanized Post	3388-00003	19
Concrete Model, Galvanized Post	3388-00002	19

**Add $10 for black post*

The base and spring keep their original shape and looks for life. Posts are available in powder-coated or galvanized finish

Concrete model includes concrete-expandable studs

Other colors available!

Flexible Spring Post Base Options for Bollards

Offers benefits of fixed bollards without the maintenance. Versatile and easy to install, available with or without a galvanized signpost. Order signs and brackets separately.

- 52" Yellow Bollards: other colors, heights are available
- Impact resistant with 360° of flexibility
- Withstands high winds
- Eliminates replacement costs and parking lot damage

Item Name	Part #	Weight (Lb.)
52" Yellow Bollard, for Concrete	3388-00005	21
52" Yellow Bollard, for Asphalt	3388-00006	21
52" Bollard with 96" Post, for Concrete	3388-00007	23
52" Bollard with 96" Post, for Asphalt	3388-00008	23
Flexpost Bracket	3388-00010	1

Snap'N Safe Premier Surface Mount Breakaway Anchor

- Simply Bolt the Breakaway to Concrete with 3 small holes
- No need to bore out concrete for new sign post installations or when repairing damaged sign posts
- Strong Cast Iron Make
- Available for Round, Square and U-Channel Posts
- NCHRP 350 Compliant
- Can Withstand 120 MPH Winds

Square Surface Mount

Made of cast iron gray iron, no concrete boring

EASY INSTALLATION
(Hardware included)

Simply drill (3) holes in concrete using the base as guide. Secure coupler to concrete with (3) bolts. Attach sign post with (2) corner bolts.

2" Square Surface Mount	034-00134

Round Surface Mount

Made of cast iron gray iron, no concrete boring

EASY INSTALLATION
(Hardware included)

Simply drill (3) holes in concrete using the base as guide. Secure coupler to concrete with (3) bolts. Insert sign post and tighten screw.

2 ⅜" Round Surface Mount	034-00133

U-Channel Surface Mount

Made of cast iron gray iron, no concrete boring

EASY INSTALLATION
(Hardware included)

Simply drill (3) holes in concrete using the base as guide. Secure coupler to concrete with (3) bolts. Insert sign post and tighten screw.

2-3 lbs U-Channel Surface Mount	034-00135

Square & U-Channel Post Anchor

Custom Sizes Available!

Square Post Anchor

For 2" Square Posts
Weight 5.25 lb.

(034-00142) with anchor screws
(034-00142SM) w/o screws

- 6" x 6" x ⅜" base plate
- 2 ¼" x 2 ¼" x 6" sleeve
- ⅜" holes are 1" on center

U-channel Post Anchor

For 2-3 lb. U-channel Posts
Weight 5 lb.

(034-00143) with anchor screws
(034-00143SM) w/o screws

- 6" x 6" x ⅜" base plate
- 1.9" diameter x 6" stub
- Stub holes are 3" on center

Square & U-Channel Post Anchor Installation

- Easy to install
- Durable galvanized coating
- Use base plate as a template to mark for holes in concrete
- Drill 4 holes into concrete using masonry bit, not included
- For Square Posts, slide 2" post into sleeve; line up holes; then fasten with hardware, sold separately
- For U-channel Posts, line up post's holes to round stub's holes; then fasten with hardware, sold separately

*Suited for posts perforated with holes spaced 1" on center:

Posts are available from TAPCO! Sold separately.

Sure Sight™ Undercarriage Inspection Mirror

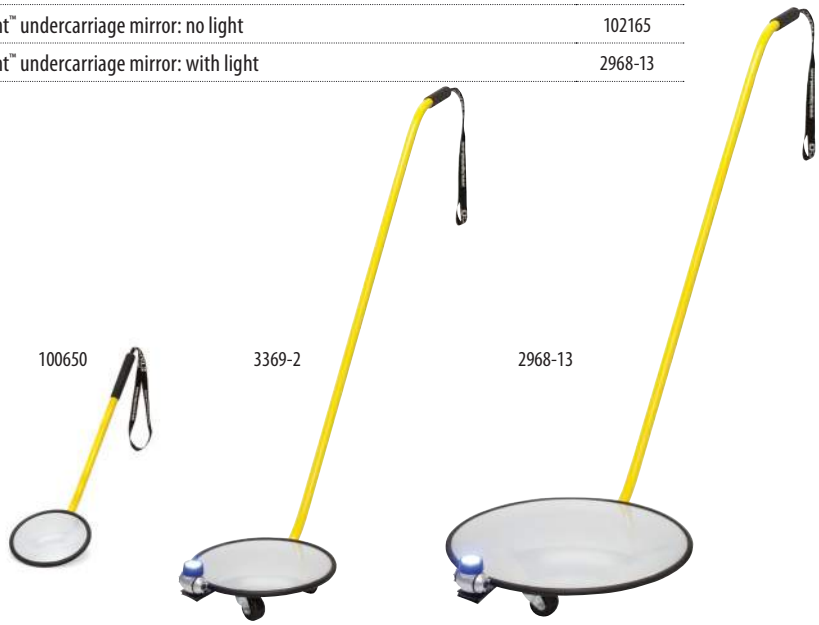
TAPCO Sure Sight™ wide-view convex inspection mirrors come in a 9" hand-held and 12" and 18" wheeled models. LED lights are optional. Three models have articulating handles that swivel in multiple directions, allowing you to maneuver the mirror into tight spaces. The handle can be detached for compact storage, and the strap can be used to hang the unit from a hook or peg. The 12" and 18" Sure Sight™ inspection mirrors feature a unique, three-caster design that keeps it stable on uneven surfaces. All three Sure Sight mirrors are available with a Velcro®-attachable/detachable LED light on a 180˚ swivel head. The LED lights are powered by three AAA batteries, included.

NEW item

TAPCO MADE

Optional LED light rotates 180˚ and is detachable

Item Name	SKU #
9" Sure Sight™ undercarriage mirror: no light - handheld model	100650
9" Sure Sight™ undercarriage mirror: with light - handheld model	100403
12" Sure Sight™ undercarriage mirror: no light, NSN # 5120-12-349-3304	102164
12" Sure Sight™ undercarriage mirror: with wheels and light	3369-2
18" Sure Sight™ undercarriage mirror: no light	102165
18" Sure Sight™ undercarriage mirror: with light	2968-13



1-800-236-0112 • www.tapconet.com

Traffic and Parking Control Co, Inc. 5100 West Brown Deer Road, Brown Deer WI 53223 U.S.A.
Phone 800-236-0112 FAX 800-444-0331 www.tapconet.com

Contract Holder
GS-07F-5924R
GS-07F-0234U

1006-00001 February 19, 2016 9:59 AM

Appendix C

Alyssa Heppe
Imagine Nation Inc.
19576 Chaffer Road
MORTON, IL 61550
Phone: 847-6400-0904
Fax:
vibeke@imagineparks.com

CUSTOMER INFORMATION

Name	Farnsworth Group
Address	100 Walnut Street
City, State Zip	PEORIA, IL 61602
Country	United States
Phone	309-689-9888 ext 227
Fax	

PROJECT INFORMATION

Project Name	Tazewell County Wayfinding
Job Location	PEORIA, IL 61602
Quote Number	117863
Revision	0
Freight Miles	279 miles
Date Quoted	July 28, 2017
Day Quote Expires	August 27, 2017

DESIGN CRITERIA

Building Code	IBC 2009	Calc Books	2
Wind Speed	90	Drawings	4
Ground Snow Load	20	Submittal Approval Required	NO
Min Clearance Height		Sealed Drawings Required	YES
		Upper Roof Slope	6.0/12

BUILDING DESCRIPTION

Model and Size	KSK-3-8MR		**3,330.00**
Primary Roof	Multi-Rib Metal Roof "R" Panel		**1,050.00**
Anchor Bolts			**215.00**
36"W x 48"H x 2 1/4" deep Single Sided		Qty: 3	**2,310.00**
FINISHES: COLORS			
Frame	Poli-5000	TBD	**0.00**
Roof		TBD	**0.00**

BUILDING TOTALS

Building Shipping Weight	988 lbs	Building Price Each	**6,905.00**

QUOTE TOTALS

Building Quantity	1	Total Price	**6,905.00**
		Total Engineering Price	**250.00**
		State Sales Tax	
		Additional Sales Tax	
Total Shipping Weight	988 lbs	Freight Charge	**700.00**
		GRAND TOTAL	**7,855.00**

BIN KSK-3-8MR-S40
CLR FR0-RF0

Appendix D

Wayfinding Points of Interest

(Categorized by Community)

Destination Type	East Peoria	Morton	Pekin	Washington
On-street bikeways	See Community Maps	See Community Maps	See Community Maps	See Community Maps
Off-Road Trails	River Trail of Illinois (Carl "Bud" Schmitt Trail) - Extends from Bob Michel Bridge to Morton Village limits - East Peoria segment between Main St & Bob Michel Bridge. - Bud Schmitt segment between Main St and Morton. - Riverfront Trail from Holiday Inn Express to Granite City - Riverfront Trail from EastPort Marina to Spindler Marina	River Trail of Illinois - Extends from East Peoria to Morton - Morton jurisdiction between Hawthorn Ave. & Detroit Ave. Spur along Veterans Road	(1) Pekin Park Trail (2) Independence Park Trail	Washington Recreation Trail - Trailheads at: Washington Park McDonald's Harry Lahood Park
Commercial centers	Levee District/Riverside Dr Four Corners District Fondulac Plaza	Downtown Field Shopping Center Morton Towne Centre	(1) Downtown (2) East Court Village/Pekin Mall (3) Sunset Plaza	(1) Downtown (Washington Square)
CityLink Bus Shelters	Along W. Washington Street west of Main Street At Walmart At ICC Main Campus At ICC Dingledine Building	N/A	(1) At Pekin Courthouse (2) Kroger on Broadway	Washington Plaza
Schools	Neil A. Armstrong Primary School Don. D. Shute School Wilson School Paul L. Bolin School Lincoln School Glendale School Central Jr. High School East Peoria Community High School Illinois Central College Robein Elementary Family Center Head Start	Morton H.S. Grundy Elementary School Lincoln Elementary School Lettie Brown Elementary School Bethel Lutheran School Blessed Sacrament School Jefferson School Morton Jr High	(1) Pekin Community High School (2) Edison Jr High School (3) Broadmore Jr High (3) C.B. Smith Primary School (3) Dirksen Primary School (3) Jefferson Primary School (3) L.E. Starke Primary School (3) Scott Altman Primary School (3) Washington Intermediate School (3) Willow Primary School (3) Wilson Intermediate School	(1) Washington Community H.S. (3) Central School Dist 51 (3) Washington Middle School (3) Lincoln Grade School (3) Beverly Manor Junior High School (3) J.L. Hensey Elementary School (3) St Pat Catholic School
Civic/community destinations	Eastside Centre ICC Performing Arts Center Post Office Library	Bertha Frank Performing Arts Center American Legion V.F.W. Post Office Library	(1) Library (1) Pavilion on the Lagoon/Parkside Athletics (2) Post Office (3) American Legion (3) V.F.W.	(1) 5 Points (3) American Legion (3) V.F.W. (3) Post Office (3) Library
Local or regional parks	Cooper Park South Spindler Marina Fondulac Park West Veterans Park Splashdown Water Park East Peoria Riverfront Park Fondulac Drive Lookout Point Bennett's Terraqueous Garden Brady Bark Park Sports Fields at Eastside Center Neumann Park	Birchwood Park/Softball Fields/Pickleball Courts Freedom Hall Horseshoe park Idlewood Arts Pavilion Idlewood Park McClallen Park Memorial Plaza Morton Pool Northwood Park/Baseball Fields/Disc golf Course Oakwood Park and Oakwood Dog Park Recreation Center/Indoor Soccer Facility Southwood Park/JFL Football Fields/Tennis Courts Westwood Park/Bike trail/Disc golf Course	(1) Independence Park (1) John T McNaughton Park (1) Mineral Springs Park (1) Riverfront Park (2) Avanti's Dome (2) Coal Miner's Park (2) Everett Mckinley Dirksen Park (2) Sports Complex (2) Willow Park (3) Blenkiron Park (3) Southside Business Assoc. Park (3) Railsplitters Park (3) Rotary Park	(1) Meadow Valley Park (1) Oak Ridge Park (1) Washington Park (2) Harry Lahood Park (2) Washington Park Pool (3) Birchwood Park (3) Bowen Lake Park (3) Candlewood Park (3) Grant Park (3) Recreation Facilities Park (3) Sweitzer Park (3) Weaver Park (3) Westgate Park
Hospitals	N/A	N/A	(2) Pekin Hospital	N/A
Bridges	Bob Michel Bridge, future McCluggage Bridge	N/A	N/A	N/A

Note: Destinations with preceeding numbers were ranked by the corresponding Community in a way to prioritize the implementation of wayfinding signage.

Appendix E

Budgetary Costing Data

(Unit Costing Data based on Year 2017 Contractor Furnish and Install)

Sign Placement	Description of Proposed Signage	Sign Type			
		Directional	Confirmation	Turning	Informational
		Unit Cost	*Unit Cost*	*Unit Cost*	*Unit Cost*
		$1,000 each	*$1,000 each*	*$500 each*	*$10,000 each*
East Peoria					
Near Fon du Lac Park District Administration Center	Informational signage at strategic location of existing off-road trail				1
Along existing off-road trail located east and west of Fon du Lac Park District Administration Center	Confirmation signage for existing off-road trail		2		
Along existing off-road trail near Central Junior High School	Directional signage to Post Office, Fondulac Park and Veterans Park	2			
Along existing off-road trail near Main Street	Directional signage to Four Corners District and Confirmatioin signage within urban area	2	2		
Along existing off-road trail	Confirmation signage within urban area		6		
Along existing off-road trail near Levee District	Direction signage to Levee District	2			
Along existing off-road trail near River Road	Directional signage to Riverfront Park, Riverfront Businesses, Bob Michel Bridge	2			
Near Riverfront Park	Informational signage at start of existing off-road trail, Confirmation & Turning signage within urban area		4	2	1
Intersection of Centennial Drive and Highview Road	Directional signage to Illinois Central College, Confirmation signage along Centennial Drive	2	2		
Along Centennial Drive	Information signange at west end of Centennial Drive				1
	Total Units =	10	16	2	2
	Concept Budget per Unit =	$ 10,000	$ 16,000	$ 1,000	$ 20,000

Appendix E

Budgetary Costing Data

(Unit Costing Data based on Year 2017 Contractor Furnish and Install)

Sign Placement	Description of Proposed Signage	Sign Type			
		Directional	Confirmation	Turning	Informational
		Unit Cost	*Unit Cost*	*Unit Cost*	*Unit Cost*
		$1,000 each	*$1,000 each*	*$500 each*	*$10,000 each*
Morton					
Along South 4th Street	Informational signage for southern gateway to the Village				1
Intersection of 4th Street and Idlewood Street	Directional signage to Idlewood Park, Morton Pool, Southwood Park	2			
Intersection of 4th Street and Birchwood Street	Directional signage to Birchwood Park, Freedom Hall	2			
Intersection of 4th Street and Jefferson Street	Turning signage			2	
Near the intersection of 4th Street and Main Street	Directional signage to Downtown Morton destinations and trail connections to East Peoria and Washington	4			
At pavilion near intersection of Jefferson Street and Detroit Avenue	Informational signage for western gateway to the Village				1
Near intersection of Jackson Street and Veterans Road	Directional signage to Westwood Park and VFW	2			
Intersection of Main Street and Jackson Street	Directional signage to junior high, high school, and McClallen Park	2			
Along North Main Street	Informational signage for northern gateway to the Village, Confirmation signage		2		1
	Total Units =	12	2	2	3
	Concept Budget per Unit =	$ 12,000	$ 2,000	$ 1,000	$ 30,000
Pekin					
Eastern limits of existing off-road trail	Directional signage at beginning of existing off-road trail	2			
Along existing off-road trail near Parkway Drive	Directional signage to Cole Miners Park and the high school	2			
Along existing off-road trail near Red Bud Memorial Drive	Directional signage to Parkside Althletics	2			
Along existing trail near Sycamore Street	Directional signage to Mineral Springs Park Pavilion on the Lagoon, Confirmation signage within urban area	2	2		
Intersection of Broadway Street and 14th Street	Turning signage within urban area			4	
Along existing trail near 3rd Street and 5th Street	Directional signage to Downtown Pekin destinations	4			
Near Riverfront Park	Informational signage for western gateway to the City				1
	Total Units =	12	2	4	1
	Concept Budget per Unit =	$ 12,000	$ 2,000	$ 2,000	$ 10,000

Appendix E

Budgetary Costing Data

(Unit Costing Data based on Year 2017 Contractor Furnish and Install)

Sign Placement	Description of Proposed Signage	Sign Type			
		Directional	Confirmation	Turning	Informational
		Unit Cost	*Unit Cost*	*Unit Cost*	*Unit Cost*
		$1,000 each	*$1,000 each*	*$500 each*	*$10,000 each*
Washington					
Along South Main Street	Informational signage for southern gateway to the City				1
Intersection of South Main Street and Holland Street	Turning signage around the Washington Square			2	
Intersection of Holland Street and Market Street	Turning signage around the Washington Square			2	
Along Market Street	Directional signage to Washington Square and high school	2			
Intersection of Market Street and Zinser Place	Turning signage around the Washington Square			2	
Intersection of Zinser Place and North Main Street	Turning signage around the Washington Square			2	
Near intersection of North Main Street and Hilldale Avenue	Directional signage to Sweitzer Park, Weaver Park, and Birchwood Park	2			
Along North Main Street at existing off-road trail	Directional signage to Washington Park Pool, 5 Points and Library	2			
Along North Main Street	Informational signage for northern gateway to the City				1
Intersection of North Main Street and West Cruger Road	Turning signage			2	
Intersection of West Cruger Road and Dallas Road	Directional signage to Washington Park Pool, 5 Points and Library	2			
Intersection of West Cruger Road and Cummings Lane	Directional signage to Oak Ridge Park	2			
Intersection of Cummings Lane and Centennial Drive	Turning signage			2	
Intersection of Centennial Drive and Summit Drive	Directional signage to Washington Plaza	2			
Along Centennial Drive	Informational signage for western gateway to the City				1
	Total Units =	12	0	12	3
	Concept Budget per Unit =	$ 12,000	$ -	$ 6,000	$ 30,000

Appendix E

Budgetary Costing Data

(Unit Costing Data based on Year 2017 Contractor Furnish and Install)

Sign Placement	Description of Proposed Signage	Sign Type			
		Directional	Confirmation	Turning	Informational
		Unit Cost	*Unit Cost*	*Unit Cost*	*Unit Cost*
		$1,000 each	*$1,000 each*	*$500 each*	*$10,000 each*
Connecting Route Between East Peoria and Morton					
Along off-road trail near intersection of Veterans Road	Directional signage to Westwood Park and VFW	2			
Along off-road trail near intersection of Pleasant Hill Road	Confirmation signage		2		
Along off-road trail near intersection of Matheny Road	Directional signage to Newman Park and Eastside Center Complex	2			
	Total Units =	4	2	0	0
	Concept Budget per Unit =	$ 4,000	$ 2,000	$ -	$ -
Connecting Route Between Morton and Pekin					
Near intersection of Allentown Road and Veterans Drive	Confirmatioin signage		2		
Near intersection of Allentown Road and Springfield Road	Confirmatioin signage		2		
Near intersection of Allentown Road and C.R. 2300 E	Confirmatioin signage		2		
Intersection of Allentown Road and South 4th Street	Turning signage			2	
Intersection of South 4th Street and Broadway Street	Turning signage			4	
	Total Units =	0	6	6	0
	Concept Budget per Unit =	$ -	$ 6,000	$ 3,000	$ -

Appendix E

Budgetary Costing Data

(Unit Costing Data based on Year 2017 Contractor Furnish and Install)

Sign Placement	Description of Proposed Signage	Sign Type			
		Directional	Confirmation	Turning	Informational
		Unit Cost	*Unit Cost*	*Unit Cost*	*Unit Cost*
		$1,000 each	*$1,000 each*	*$500 each*	*$10,000 each*
Connecting Route Between Morton and Washington					
Near intersection of North Main Street and Courtland Avenue	Confirmation signage		2		
Intersection of North Main Street and Lakeland Road	Turning signage			2	
Near intersection of Hirstein Road and Lakeland Road	Confirmation signage		2		
Intersection of Hirstein Road and Cooper Road	Turning signage			2	
Intersection of Cooper Road and Foster Road	Turning signage			2	
Intersection of Foster Road and Schuck Road	Confirmation signage		2		
Near intersection of Guth Road and South Main Street	Turning signage and confirmation signage		2	2	
	Total Units =	0	8	8	0
	Concept Budget per Unit =	$ -	$ 8,000	$ 4,000	$ -
Overall Wayfinding Signage Plan					
	Total Units =	50	36	34	9
	Concept Budget per Unit =	$ 50,000	$ 36,000	$ 17,000	$ 90,000

EXHIBITS

EXHIBIT 1:

OVERALL

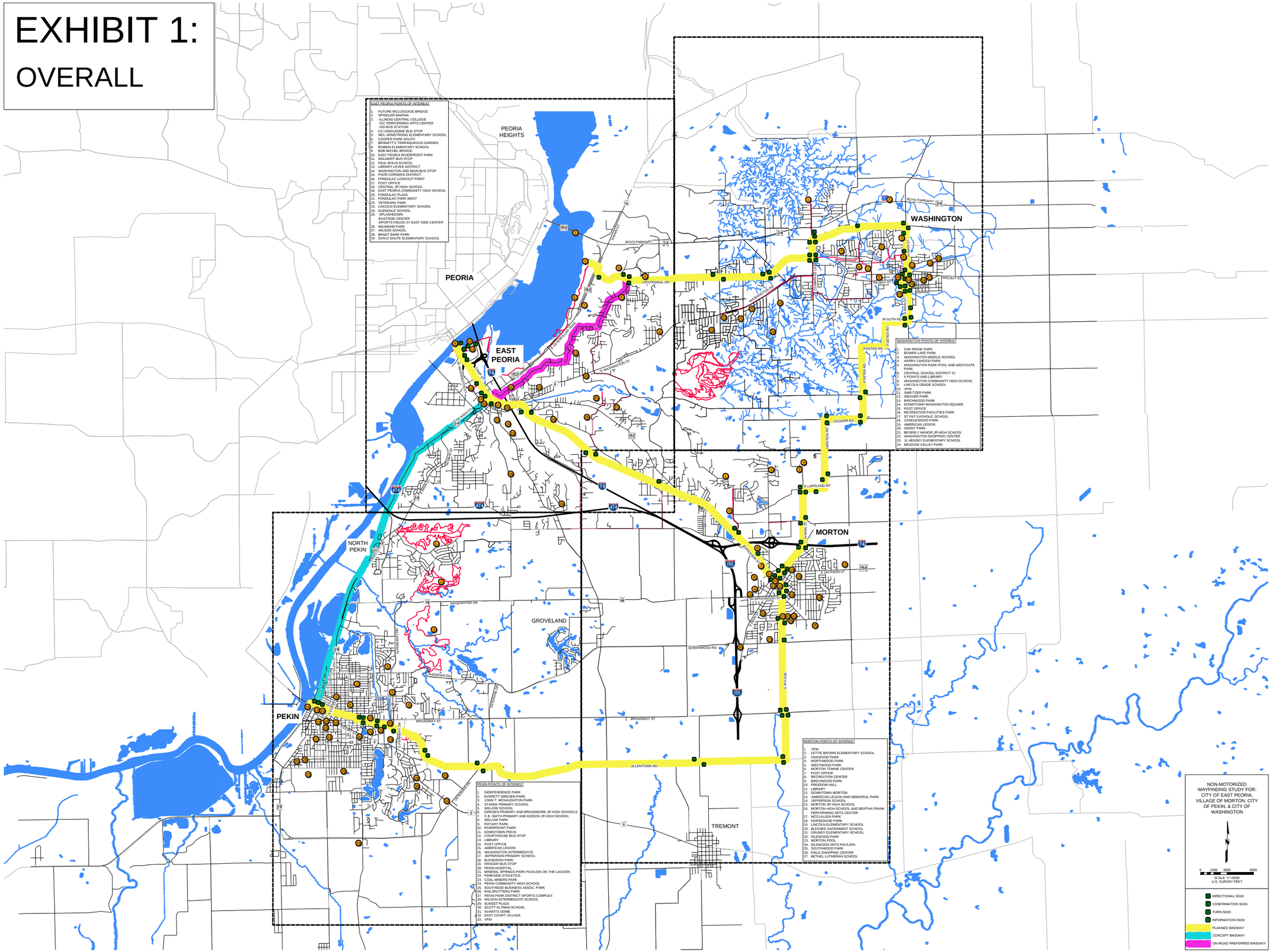


EXHIBIT 2:

EAST PEORIA

NON-MOTORIZED WAYFINDING STUDY FOR:
CITY OF EAST PEORIA, VILLAGE OF MORTON, CITY OF PEKIN, & CITY OF WASHINGTON

SCALE: 1"=1000'
U.S. SURVEY FEET

- D DIRECTIONAL SIGN
- C CONFIRMATION SIGN
- T TURN SIGN
- I INFORMATION SIGN
- PLANNED BIKEWAY
- CONCEPT BIKEWAY
- ON-ROAD PREFERRED BIKEWAY

EAST PEORIA POINTS OF INTEREST

1. FUTURE MCLUGGAGE BRIDGE
2. SPINDLER MARINA
3. -ILLINOIS CENTRAL COLLEGE
   -ICC PERFORMING ARTS CENTER
   -ISS BUS STATION
4. ICC DINGLEDINE BUS STOP
5. NEIL ARMSTRONG ELEMENTARY SCHOOL
6. COOPER PARK SOUTH
7. BENNETT'S TERRAQUEOUS GARDEN
8. ROBEIN ELEMENTARY SCHOOL
9. BOB MICHEL BRIDGE
10. EAST PEORIA RIVERFRONT PARK
11. WALMART BUS STOP
12. PAUL BOLIN SCHOOL
13. LIBRARY LEVEE DISTRICT
14. WASHINGTON AND MAIN BUS STOP
15. FOUR CORNERS DISTRICT
16. FONDULAC LOOKOUT POINT
17. POST OFFICE
18. CENTRAL JR HIGH SCHOOL
19. EAST PEORIA COMMUNITY HIGH SCHOOL
20. FONDULAC PLAZA
21. FONDULAC PARK WEST
22. VETERANS PARK
23. LINCOLN ELEMENTARY SCHOOL
24. GLENDALE SCHOOL
25. -SPLASHDOWN
    -EASTSIDE CENTER
    -SPORTS FIELDS AT EAST SIDE CENTER
26. NEUMANN PARK
27. WILSON SCHOOL
28. BRADY BARK PARK
29. DON D SHUTE ELEMENTARY SCHOOL

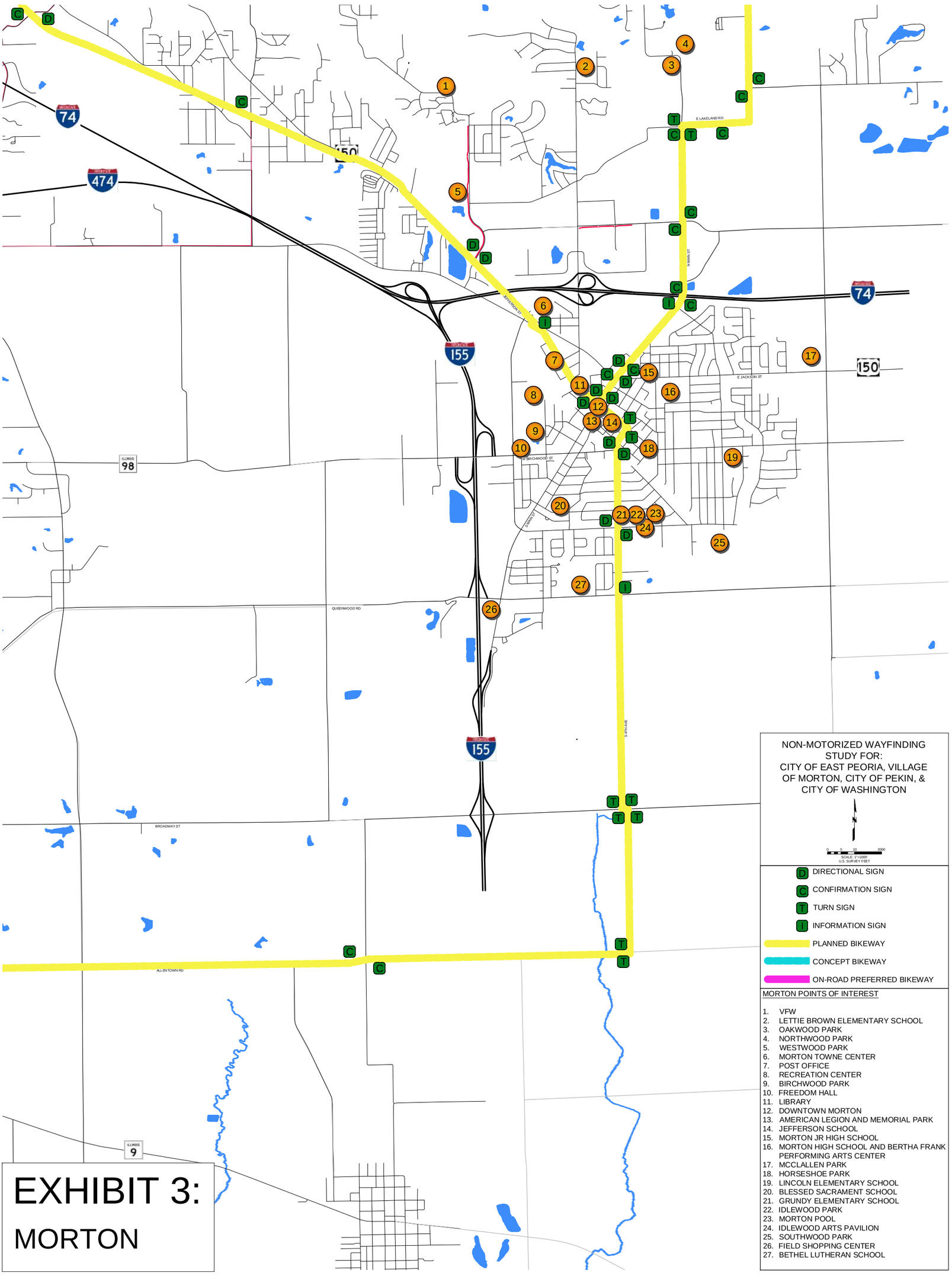
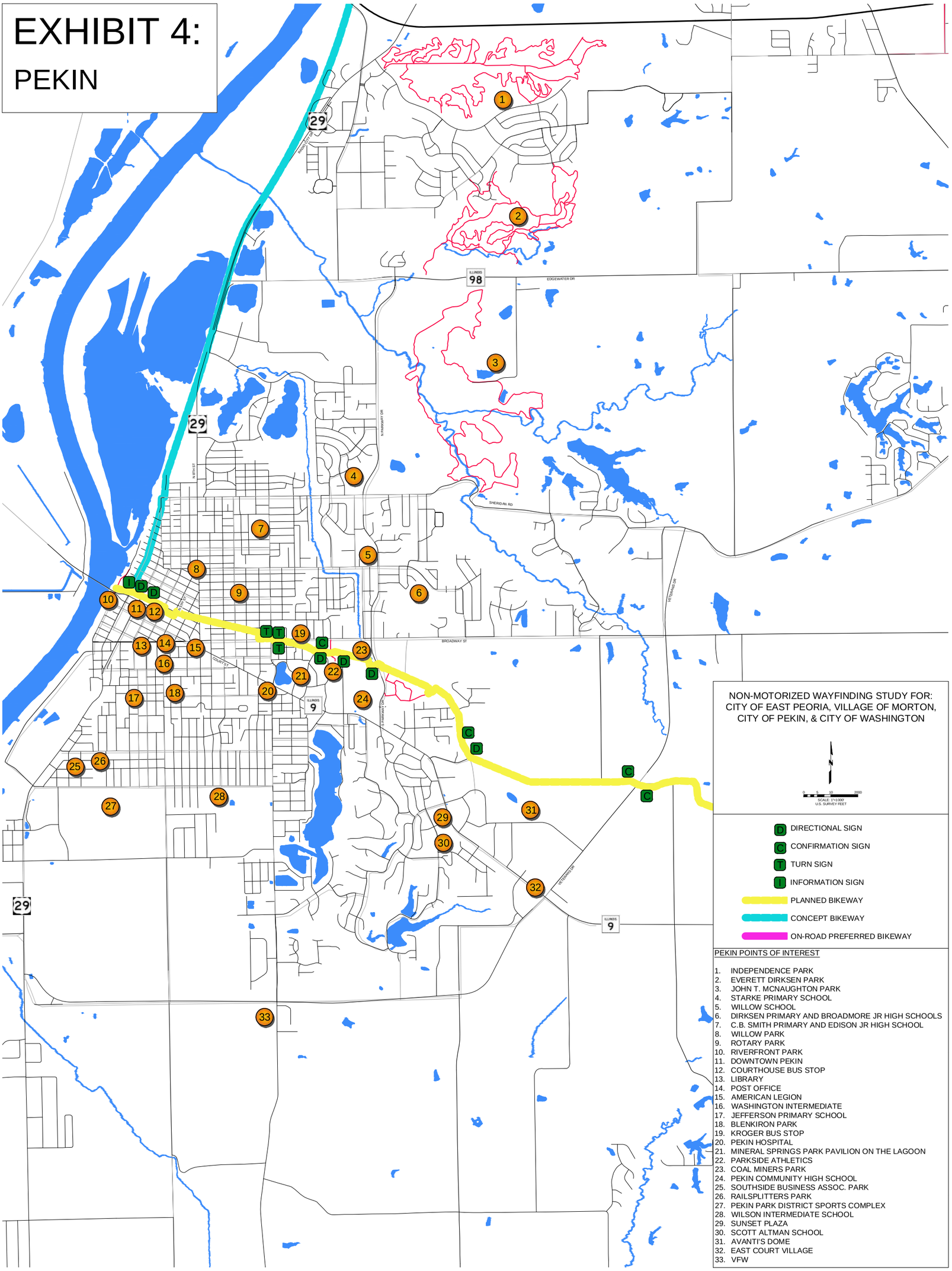


EXHIBIT 3:
MORTON

EXHIBIT 4:
PEKIN



NON-MOTORIZED WAYFINDING STUDY FOR:
CITY OF EAST PEORIA, VILLAGE OF MORTON,
CITY OF PEKIN, & CITY OF WASHINGTON

0 1,000 2,000
SCALE: 1"=2,000'
U.S. SURVEY FEET

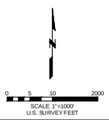
- D DIRECTIONAL SIGN
- C CONFIRMATION SIGN
- T TURN SIGN
- I INFORMATION SIGN
- PLANNED BIKEWAY
- CONCEPT BIKEWAY
- ON-ROAD PREFERRED BIKEWAY

PEKIN POINTS OF INTEREST

1. INDEPENDENCE PARK
2. EVERETT DIRKSEN PARK
3. JOHN T. MCNAUGHTON PARK
4. STARKE PRIMARY SCHOOL
5. WILLOW SCHOOL
6. DIRKSEN PRIMARY AND BROADMORE JR HIGH SCHOOLS
7. C.B. SMITH PRIMARY AND EDISON JR HIGH SCHOOL
8. WILLOW PARK
9. ROTARY PARK
10. RIVERFRONT PARK
11. DOWNTOWN PEKIN
12. COURTHOUSE BUS STOP
13. LIBRARY
14. POST OFFICE
15. AMERICAN LEGION
16. WASHINGTON INTERMEDIATE
17. JEFFERSON PRIMARY SCHOOL
18. BLENKIRON PARK
19. KROGER BUS STOP
20. PEKIN HOSPITAL
21. MINERAL SPRINGS PARK PAVILION ON THE LAGOON
22. PARKSIDE ATHLETICS
23. COAL MINERS PARK
24. PEKIN COMMUNITY HIGH SCHOOL
25. SOUTHSIDE BUSINESS ASSOC. PARK
26. RAILSPLITTERS PARK
27. PEKIN PARK DISTRICT SPORTS COMPLEX
28. WILSON INTERMEDIATE SCHOOL
29. SUNSET PLAZA
30. SCOTT ALTMAN SCHOOL
31. AVANTI'S DOME
32. EAST COURT VILLAGE
33. VFW

EXHIBIT 5:
WASHINGTON

NON-MOTORIZED WAYFINDING
STUDY FOR:
CITY OF EAST PEORIA, VILLAGE OF MORTON, CITY OF PEKIN, & CITY OF WASHINGTON



- D DIRECTIONAL SIGN
- C CONFIRMATION SIGN
- T TURN SIGN
- I INFORMATION SIGN
- PLANNED BIKEWAY
- CONCEPT BIKEWAY
- ON-ROAD PREFERRED BIKEWAY

WASHINGTON POINTS OF INTEREST

1. OAK RIDGE PARK
2. BOWEN LAKE PARK
3. WASHINGTON MIDDLE SCHOOL
4. HARRY LAHOOD PARK
5. WASHINGTON PARK POOL AND WESTGATE PARK
6. CENTRAL SCHOOL DISTRICT 51
7. 5 POINTS AND LIBRARY
8. WASHINGTON COMMUNITY HIGH SCHOOL
9. LINCOLN GRADE SCHOOL
10. VFW
11. SWEITZER PARK
12. WEAVER PARK
13. BIRCHWOOD PARK
14. DOWNTOWN WASHINGTON SQUARE
15. POST OFFICE
16. RECREATION FACILITIES PARK
17. ST PAT CATHOLIC SCHOOL
18. CANDLEWOOD PARK
19. AMERICAN LEGION
20. GRANT PARK
21. BEVERLY MANOR JR HIGH SCHOOL
22. WASHINGTON SHOPPING CENTER
23. JL HENSEY ELEMENTARY SCHOOL
24. MEADOW VALLEY PARK