



BICYCLE AND PEDESTRIAN WAYFINDING PROJECT

City of Davis

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Presentation to WD ITE AM
6/29/2026

AGENDA

About
Davis

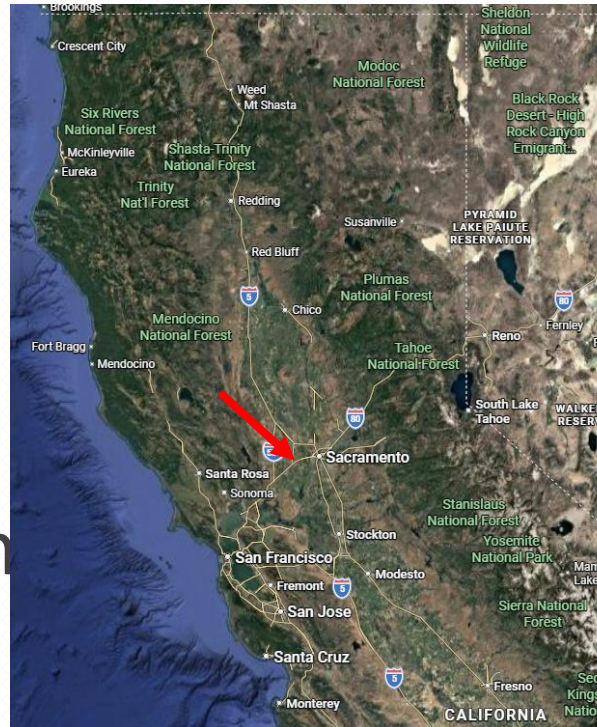
Bicycle and
Pedestrian
Wayfinding Sign
Project

Key Lessons
Learned

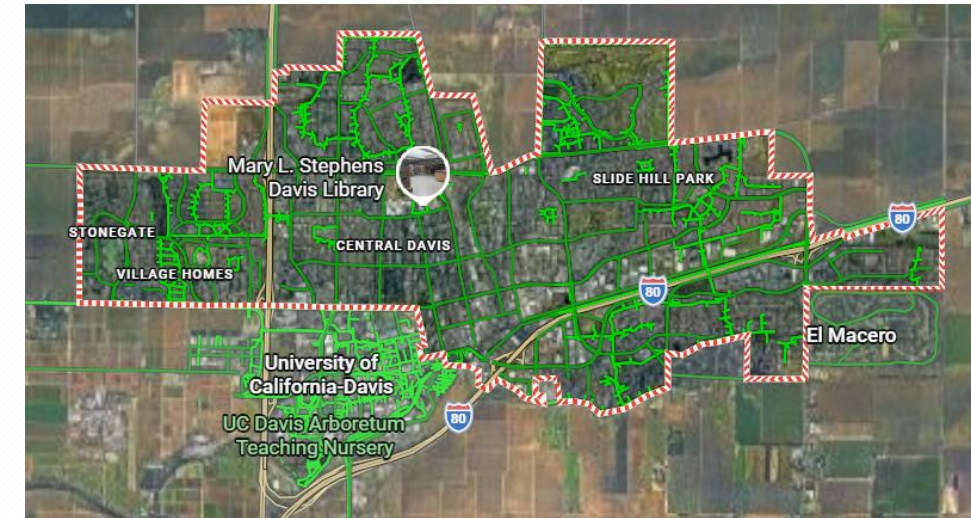
Questions

CITY OF DAVIS

- 12 miles west of Sacramento
- College town – UC Davis
- 68k residents, plus 15k on UCD campus (83k)
- 10 sq mi
- Flat – 25 to 60 ft, 35 ft rise across 6.5 miles



Credit: Google Maps



Credit: Google Maps



Credit: Wikipedia



Credit: UC Davis

CITY OF DAVIS

- Bikes!
- First bike lane in US – 1967
- Over 150 miles of bike facilities today
 - Including 13-mile Davis Bike Loop
- 20-25% bike mode share (50% among UCD students)
 - US-wide: <1%
 - Netherlands: 27%



Credit: City of Davis



Credit: City of Davis



Credit: Kittelson & Associates



Credit: Davis LocalWiki



Credit: The Guardian

BIKE AND PED WAYFINDING SIGN PROJECT

The need:

- Improve navigation
- Encourage biking/walking
- Replace Davis Bike Loop markings with signs



MUTCD regulation



MUTCD regulation



MUTCD regulation



MUTCD regulation



MUTCD regulation



Davis Bike Loop



City street names



City directional pre 1990



City directional 2000



Downtown directional 2016



Downtown orientation map



Campus regulation



Campus street names



Campus directional 2014

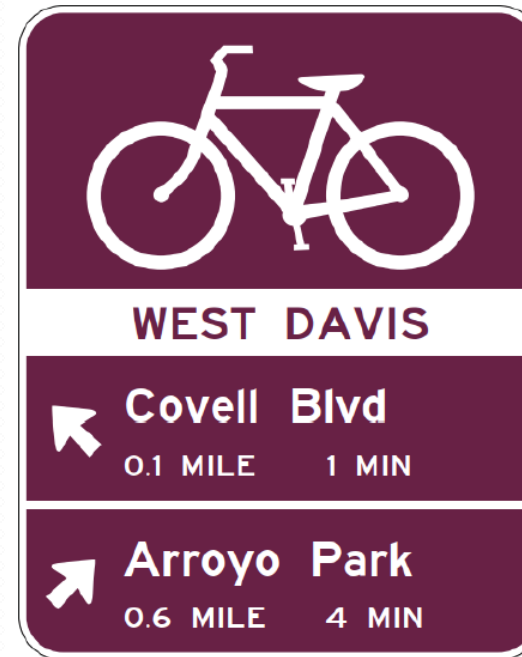
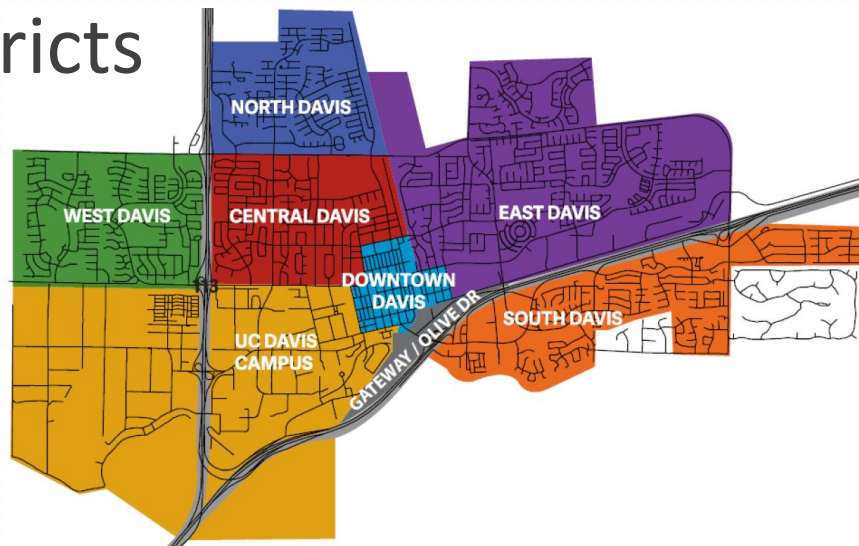


Campus orientation map 2015

BIKE AND PED WAYFINDING SIGN PROJECT

The project:

- 444 signs throughout Davis and UC Davis
- Destinations, distance, travel times
- Districts



On Street



Off Street

BIKE AND PED WAYFINDING SIGN PROJECT

The process:

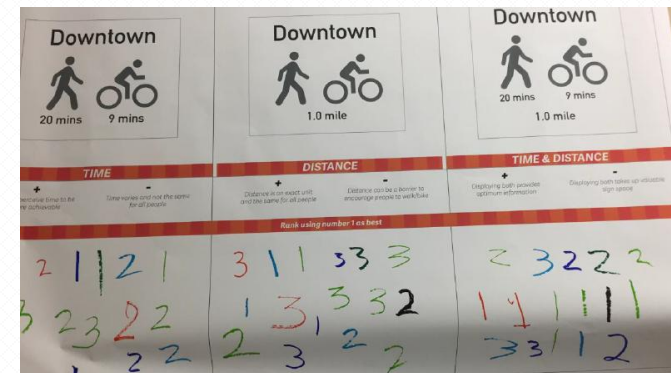
City

W-Trans

City

Contractor

- **2014** Win SACOG grant
- **2016** Outreach
- **2017** Wayfinding pilot (24 signs)
- Draft sign design in Illustrator
- GIS-based tool to collect field data
- Python script to generate signs
- **2021** Pilot in S and E Davis (172 signs)
- **2024** Expand with 248 new signs
- Verify field data vs sign details
- Suggest additional signs
- Update GIS information
- **2025** Prepare biddable document
- Second field review
- **Early 2026** Manage RFP advertisement and bid selection
- **Now** Install signs and use tool to notify City



BIKE AND PED WAYFINDING SIGN PROJECT

Process for 1 sign:

- Field-verify details
 - Existing pole or proposed pole parameters
 - Sign content accuracy and appropriateness
 - Context around sign and pole
 - Other maintenance needed (e.g. trim vegetation)



Back View



Bike POV 1



Bike POV 2



Bike POV 3



Foundation



Front View



Measurement



Pole Number



Pole



Side View

Verizon 3:31 PM 60%

Map Details

Location
Lat: 38.54772306° Long: -121.72658120°

Wayfinding Sign: PFE0340

SIGNID
PFE0340

POLE NUMBER
C2102

SIGN CATEGORY
Directional

SIGN DIRECTION
S

DISTRICT
East Davis

DESTINATION A
Second St

DISTANCE A
0.10

DIRECTION A
W

WALK TIME A

BIKE TIME A

DESTINATION B
Downtown Davis / UC Davis

DISTANCE B

Verizon 3:31 PM 60%

Map Details

Location
Lat: 38.54772306° Long: -121.72658120°

DIRECTION C
N

WALK TIME C

BIKE TIME C

ETIQUETTE MESSAGE

ETIQUETTE MESSAGE_B

BIKELOOP
No

CUSTOM

NEW POLE
No

SIGN SIZE

STATUS
Design

POINT_X

POINT_Y

BIKE AND PED WAYFINDING SIGN PROJECT

Process for 1 sign:

- Update GIS table
 - Existing pole detail (pole number, parking post or other, “needs pole”, etc.)
 - Ensure consistent destination names
 - Check arrow directions (left, right, up) and distances
 - Check if on/off street and on/off bike loop
 - Other notes

	A	B	C	H	I	J	K	L	M	N	Q	R	S	V	W	X	AC	AE	AG	AN	AO	AP	BP	BQ	BR	BS	BT	BU
1	Checke	PoleLocat	PoleSignID	POLE_NUM	SIGN CAT	SIGN_DIR	DISTRICT	DEST_A	DIST_A	DIR_A	DEST_B	DIST_B	DIR_B	DEST_C	DIST_C	DIR_C	BIKELOOP	NEW_POLE	STATUS	ONSTRE	BIKE LOC	BIKE LO	Latitude	Longitude	Notes			
4	Done	BWS103	BWS103a	P1575	Directio	S	Central Dav	Community Park	1.2	E	North Davis - North	1.6	N	East Davis - Mac	3.4	E	Yes	No	Survey Com	1	E	E	38.55621526	-121.764992				
5	Done	BWS104	BWS104a	P1579	Directio	S	Central Dav	West Davis - Arroyo	0.7	W	Community Park	1.2	E	North Davis - No	1.6	N	No	No	Survey Com	1			38.5566961	-121.764819	Might clutter with existing signs			
6	Done	BWS105	BWS105a	- No Parking	Directio	S	Central Dav	West Davis - Arroyo	0.6	W	Community Park	1.2	E				Yes	No	Survey Req	0	W	E	38.55601857	-121.764802				
7	Done	BWS106	BWS106a	C0561	Directio	E	Central Dav	West Davis - Arroyo	0.7	W	UC Davis	0.8	W	North Davis - No	1.6	E	Yes	No	Survey Com	1	N	N	38.55633862	-121.763789				
8	Done	BWS107	BWS107a	C0315	Directio	W	Central Dav	Shopping - Andersc	0.3	W	UC Davis	0.7	E	Community Park	0.75	N	Yes	No	Survey Com	1	N	N	38.55610155	-121.758800				
9	Done	BWS108	BWS108a	Needs Pole	Directio	N	Central Dav	UC Davis	0.75	N	Community Park	0.8	W	West Davis - Arr	1	E	Yes	Yes	Potential	1	W	E	38.55646464	-121.758704				
10	Done	BWS109	BWS109a	C1529	Directio	E	Central Dav	Shopping - Andersc	0.3	E	UC Davis	0.7	W	West Davis - Arr	1	N	Yes	No	Survey Req	1	N	N	38.55619489	-121.758541	Bushes may need to be trimmed for visibility. Sig			
11	Done	BWS110	BWS110a	Needs Pole	Directio	S	Central Dav	Shopping - Andersc	0.28	N	Community Park	0.8	E	West Davis - Arr	1	W	Yes	Yes	Potential	1	W	E	38.55594408	-121.758454	Could mount on existing streetlight just to north,			
12	Done	BWS111	BWS111a	P1591	Directio	W	Central Dav	Community Park	0.5	N	UC Davis	0.75	E	Downtown Davis	1	N	Yes	No	Survey Req	1	N	N	38.55584176	-121.753172	P1591 is the median splitter sign pole. Was C14U			
13	Done	BWS112	BWS112a	C2082	Directio	E	Central Dav	UC Davis	0.75	W	West Davis - Arroyo	1.3	N				Yes	No	Survey Req	1	N	N	38.55593734	-121.751622				
14	Done	BWS113	BWS113a	C0117	Directio	W	Central Dav	Community Park	0.2	W	Downtown Davis -	0.75	E	East Davis - Mac	2.5	W	Yes	No	Survey Req	1	W	W	38.55574492	-121.748721				
15	Done	BWS114	BWS114a	Needs Pole	Directio	S	Central Dav	Community Park	0.2	N	North Davis - North	1.2	N	West Davis - Arr	1.6	W	Yes	Yes	Potential	1	W	N	38.55565615	-121.747236				
16	Done	BWS115	BWS115a	C2087	Directio	E	Central Dav	Downtown Davis -	0.75	W	UC Davis	0.9	W	West Davis - Arr	1.6	N	Yes	No	Survey Req	1	N	E	38.55631754	-121.746890				
17	Done	BWS116	BWS116a	Needs Pole	Directio	N	Central Dav	Downtown Davis -	0.75	N	UC Davis	0.9	N	West Davis - Arr	1.6	E	Yes	Yes	Potential	0	E	E	38.556198	-121.747683	Could mount on nearby streetlight pole, though n			
18	Done	BWS117	BWS117a	N166	Directio	N	Central Dav	Downtown Davis -	0.75	W	UC Davis	0.9	W	West Davis - Arr	1.6	W	Yes	No	Survey Com	0	W	W	38.55628499	-121.748281				
19	Done	BWS118	BWS118a	Needs Pole	Directio	SW	Central Dav	Community Park	0.05	NE	North Davis - Cove	0.6	NE	North Davis - No	1	NE	Yes	Yes	Survey Req	0	NE	NE	38.55722799	-121.748391	During Summer 2023 field visit, pole not found. C			
20	Done	BWS119	BWS119a	N163	Directio	SW	Central Dav	North Davis - North	1	NW	East Davis - Mac	2.3	NW				Yes	No	Survey Com	0	NW	NW	38.55730100	-121.748000				

BIKE AND PED WAYFINDING SIGN PROJECT

Process for 1 sign:

- Print
 - Run Python
 - QC output
 - Update/rerun as needed

```

wayfinding.py - Documents - GVM
File Edit Tools Syntax Buffers Window Help

else:
    outrow['#VisBottom2'] = 'False'

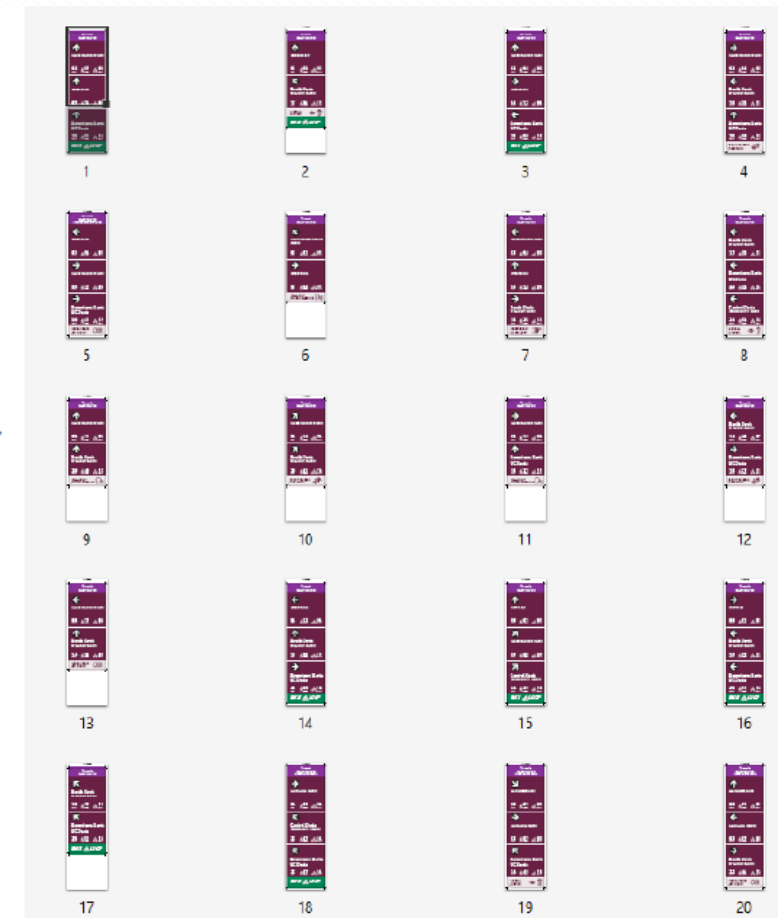
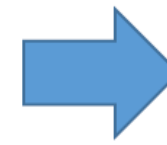
elif destcount == 2:
    outrow['#VisDest0'] = 'True'
    outrow['#VisDest0'] = 'False'
    outrow['#VisBottom1'] = 'False'
    outrow['#VisBottom2'] = 'False'
    outrow['#VisBottom1'] = 'False'
    if bottomcount > 0:
        outrow['#Vis2Bottom1'] = 'True'
    else:
        outrow['#Vis2Bottom1'] = 'False'
    if bottomcount > 1:
        outrow['#Vis2Bottom2'] = 'True'
    else:
        outrow['#Vis2Bottom2'] = 'False'

elif destcount == 3:
    outrow['#VisDest0'] = 'True'
    outrow['#VisDest0'] = 'True'
    outrow['#VisBottom1'] = 'False'
    outrow['#VisBottom2'] = 'False'
    outrow['#VisBottom1'] = 'False'
    outrow['#VisBottom2'] = 'False'
    if bottomcount > 0:
        outrow['#Vis3Bottom1'] = 'True'
    else:
        outrow['#Vis3Bottom1'] = 'False'

outrow['DirinMark'] = '%c\\DirinMark\\%d+%d.ai' % (DIRPREFIX, districtcount, destcount, bottomcount)

for i in range(destcount):
    thisdestval = DESTVAL[i]
    thisdestkey = dests[i][1]
    for each in destdict[thisdestkey]:
        outrow[each + thisdestval] = destdict[thisdestkey][each]
    return outrow

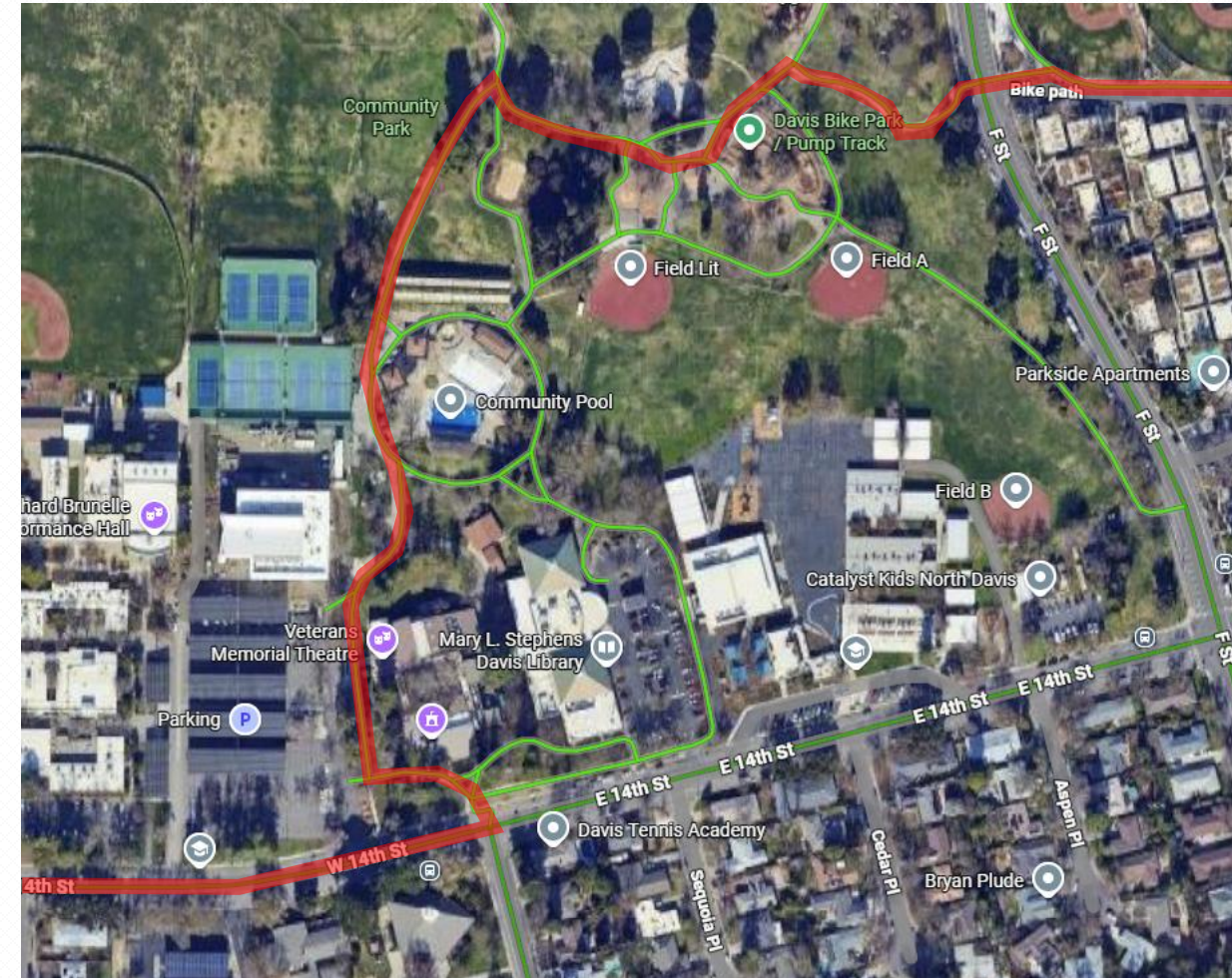
def ProcessDistrict(indistrict):
    splitdistrict = split('-', indistrict, 1)
    districtinfo = {
        'district': splitdistrict[0],
        'districtFile1': '%s\\Districts\\%s.ai' % (DIRPREFIX, splitdistrict[0]),
        'districtFile2': '%s\\Districts\\%s.ai' % (DIRPREFIX, splitdistrict[0])
    }
    if len(splitdistrict) == 1:
        districtinfo['Subdistrict'] = ''
        districtinfo['#VisSubdistrict'] = 'False'
    else:
        districtinfo['Subdistrict'] = splitdistrict[1]
        districtinfo['#VisSubdistrict'] = 'True'
    return districtinfo
212,9 79%
```



BIKE AND PED WAYFINDING SIGN PROJECT

Other steps taken:

- Suggest additional signs
 - Review paths and turns
 - Imagine self as cyclist, where are gaps?
 - Fill out sign details
 - About a dozen added



Credit: Google Maps

BIKE AND PED WAYFINDING SIGN PROJECT

Other steps taken:

- Prepare biddable document

EXHIBIT "B"

PLANS AND SPECIFICATIONS

Fabricate and install bike and pedestrian wayfinding signage. Three types of signs (1) bike loop markers; (2) on-street directional signs; and (3) off-street directional signs.

The wayfinding signs are as follows:

Bike Loop Markers

0.75 inch radius corners

63 – 16 in x 3.3 in

On-street Directional

2 inch radius corners

11 – 24 in x 30 in

12 – 24 in x 37 in

Off-street Directional

1 inch radius corners

16 – 18 in x 13.5 in

2 – 18 in x 14 in

38 – 18 in x 18.5 in

18 – 18 in x 19 in

Signs shall be aluminum 0.08 minimum thickness and engineered retro-reflective vinyl.

The poles shall be a compacted Telespar yielding breakaway sign support system or approved equal, including fasteners (see details in City of Davis Standard Plan 301-9).

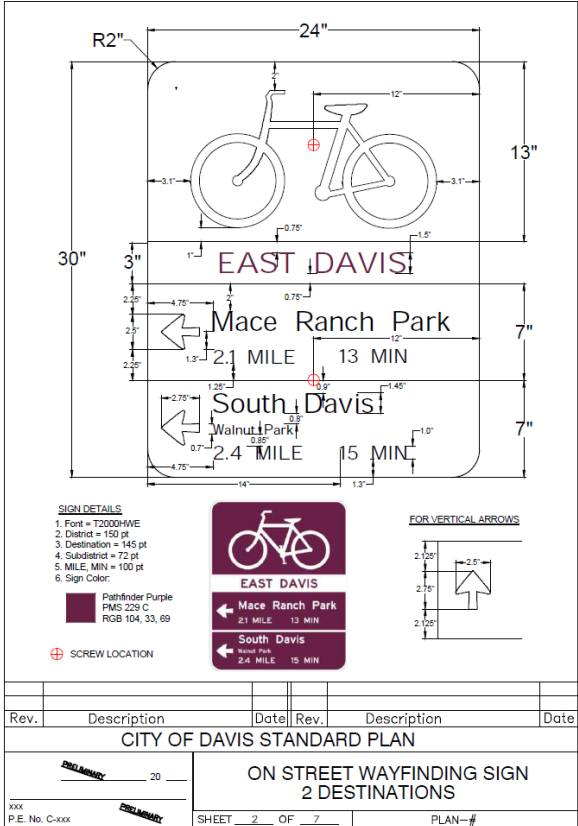
A total of 296220305160 signs will be fabricated and installed at 14773 locations, including 220 wayfinding signs and 8756 bicycle loop plaques. This project includes installing 143724 new poles. The new pole locations are labeled with pink diamonds on the map.

Sign style, verbiage, and attachment information for each location is in the following document. <https://gisportal.cityofdavis.org/portal/home/webmap/viewer.html?webmap=14771b82600b46cfac9e62b4c450732a&extent=-121.7708,38.5216,-121.644,38.5778>

When you click on a location you will get a pop-up which may have as many as six pages. Use the arrow on the upper right to page through to see all signs on pole.

Mounting height shall be seven feet unless otherwise noted in the document. Wayfinding Sign edge shall be a minimum of two feet horizontal clearance from the edge of the bike path.

TRAFFIC AND SAFETY REQUIREMENTS
A. WORKING IN STREET CORRIDORS



On-Street Wayfinding Sign 2 Destinations

Sign Details:

- Font = T2000HWE
- District = 150 pt
- Destination = 145 pt
- Subdistrict = 72 pt
- MILE, MIN = 100 pt
- Sign Color:

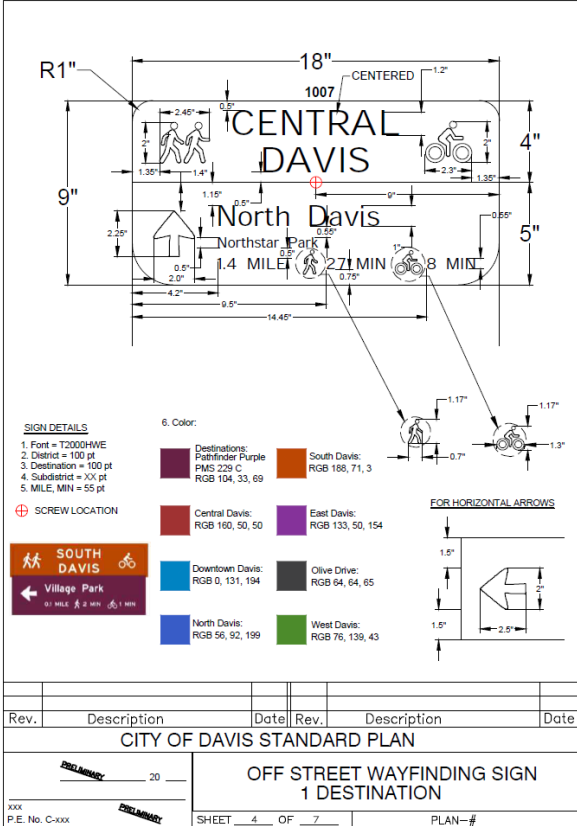
Color Legend:

- Pathfinder Purple: PMS 229 C, RGB 104, 33, 69
- South Davis: RGB 188, 71, 3
- Central Davis: RGB 160, 50, 50
- East Davis: RGB 133, 50, 154
- Downtown Davis: RGB 0, 131, 194
- Olive Drive: RGB 64, 64, 65
- North Davis: RGB 56, 92, 199
- West Davis: RGB 76, 139, 43

Dimensions:

- Overall: 24" x 30"
- Top Section: 12" x 13"
- Bottom Section: 12" x 14"
- Text: 1" x 7"
- Arrows: 2.5" x 2.5"

Destination: EAST DAVIS, Mace Ranch Park (2.1 MILE, 13 MIN), South Davis (2.4 MILE, 15 MIN)



Off-Street Wayfinding Sign 1 Destination

Sign Details:

- Font = T2000HWE
- District = 100 pt
- Destination = 100 pt
- Subdistrict = XX pt
- MILE, MIN = 55 pt

Color Legend:

- Pathfinder Purple: PMS 229 C, RGB 104, 33, 69
- South Davis: RGB 188, 71, 3
- Central Davis: RGB 160, 50, 50
- East Davis: RGB 133, 50, 154
- Downtown Davis: RGB 0, 131, 194
- Olive Drive: RGB 64, 64, 65
- North Davis: RGB 56, 92, 199
- West Davis: RGB 76, 139, 43

Dimensions:

- Overall: 18" x 9"
- Top Section: 12" x 4"
- Bottom Section: 12" x 5"
- Text: 1" x 7"
- Arrows: 2.5" x 2.5"

Destination: CENTRAL DAVIS, North Davis (1.4 MILE, 21 MIN), South Davis (1.8 MILE, 18 MIN)

BIKE AND PED WAYFINDING SIGN PROJECT

Other steps taken:

- City: Second field review
- City: Manage RFP advertisement and bid selection
- Contractor: Install signs and use tool to notify City
 - City provided GIS map with installation locations and details for each sign
 - Contractor uploads pictures of installed signs to GIS map
 - Contractor uses GIS map to notify City inspector when signs were ready for inspection
- Future: add signs to new developments using standards

BIKE AND PED WAYFINDING SIGN PROJECT

Key lessons learned:

- From 24 pilot signs:
 - Sign design parameters (font too small?)
 - Automate work
 - Standards for walk/bike times
 - How many signs
(too few = confusing, too many = clutter)
 - Where is “downtown”?
 - Sign wind loads
 - An app/portal for GIS would help



Credit: City of Davis

BIKE AND PED WAYFINDING SIGN PROJECT

Key lessons learned:

- From 200+ sign expansion:
 - Need to align entire project team on key goals and outcomes
 - Refine critical details early – e.g. need or not for naming paths
 - Project management
 - Destination descriptions – keep simple
 - Sometimes, brute force is faster than automating the last 10%



QUESTIONS?

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