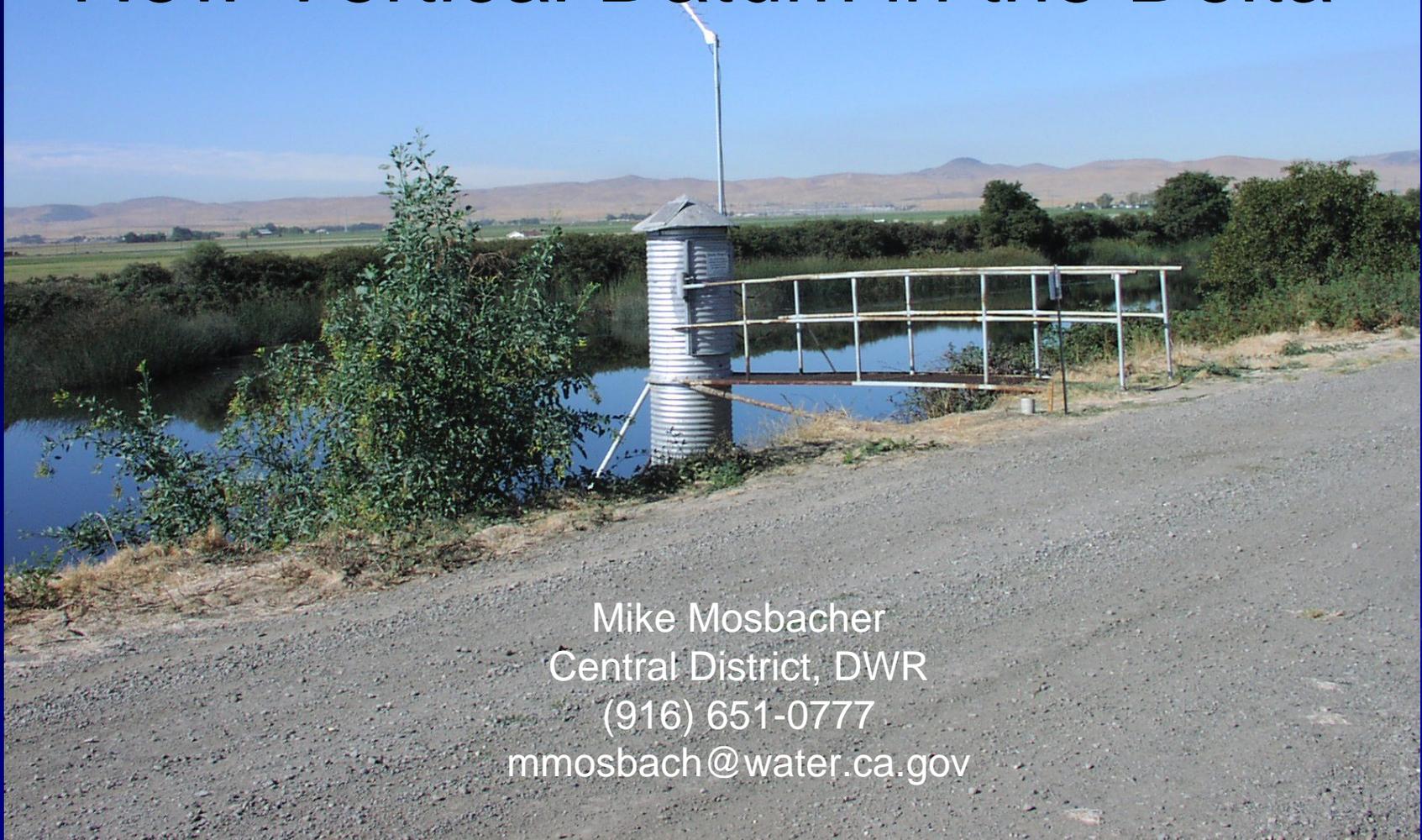


NAVD88

New Vertical Datum in the Delta



Mike Mosbacher
Central District, DWR
(916) 651-0777
mmosbach@water.ca.gov

Why Use NAVD 88

- The United States, Mexico and Canada began adopting NAVD88 in 1988 as the Vertical datum standard
- All of the major data collection agencies in the Delta have transitioned to NAVD88
- Different agencies using different data necessitates a conversion process that takes time and can lead to errors.
- The National Geodetic Survey currently has no plans to maintain NGVD29 beyond 2008

Milestones to NAVD88 Datum

- GPS survey conducted in 2002
- Staff gages and data loggers changed in 2005
- In WY2006 CDEC displayed both NGVD29 and NAVD88 data
- Starting Oct 1, 2006 CDEC only displays NAVD88 data

Physical Changes Made At Each Tide Data Station



Brass cap installed at each station



Reset Staff Gages

NGVD29

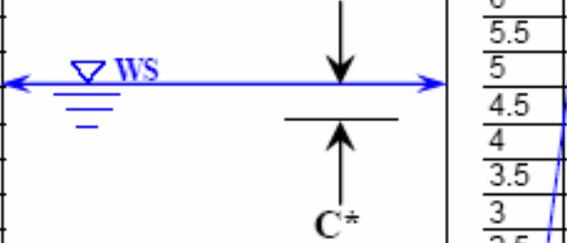
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3

**WY2005 staff zero
= NGVD29 +3.00 ft**

6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3

**WY2006 staff zero
= 0.00 ft NAVD88**

7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2



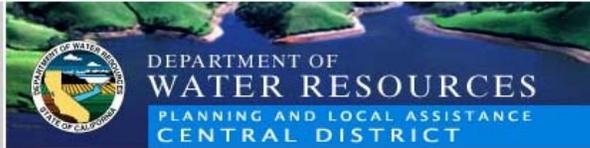
The actual difference between NGVD29 and NAVD88 at any station can vary from 2.0 to 3.0 ft depending upon previous surveys and subsidence

WY 2005 Datum: Staff zero = NGVD29 + 3.00 ft
WY 2006 Datum: Staff zero = 0.00 ft NAVD88



Recalibrated Electronic Equipment

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Central District
Department of Water Resources
(916) 651-0725
Street and Mailing Address:
901 "P" Street, 3rd Floor
Sacramento, CA 95814

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Surface Water



Central District collects, analyzes, and stores flow, stage, and tide information from rivers and streams throughout its district boundaries, as well as operating and maintaining a network of continuously monitoring tide stations in the Delta. Surface water conditions in the Delta are an issue of particular importance and data collected within the Delta is presented separate from the surface water information collected from other rivers and streams.

Datum Change in the Delta

In 2002, DWR conducted a Global Positioning System (GPS) survey of over 100 vertical control benchmarks in the Sacramento-San Joaquin Delta. The purpose of this survey was to improve the accuracy and usability of our surface water data collected by our network of tide monitoring stations. The data collected in the 2002 GPS survey was processed by the Department with assistance from the National Geodetic Survey. The vertical datum that our tide monitoring stations in the Delta are set to were updated during the summer of 2005 from the old National Geodetic Vertical Datum 29 (NGVD29) to the North American Vertical Datum 88 (NAVD88). This change in vertical datum impacts both State and local flood alert systems as well as hydrodynamic and environmental studies in the Delta. To eliminate potential confusion, the Department initiated a public outreach and education program to assist data users in transitioning from the old NGVD29 datum to the new NAVD88 datum. The Department plans to fully adopt the NAVD88 datum standard on October 1, 2006.

[Click here](#) to view a detailed explanation of the datum change and how it may affect local water operation procedures.

[Click here](#) to view a map of the Delta and all of the Department's tide monitoring stations that were affected by this datum change:

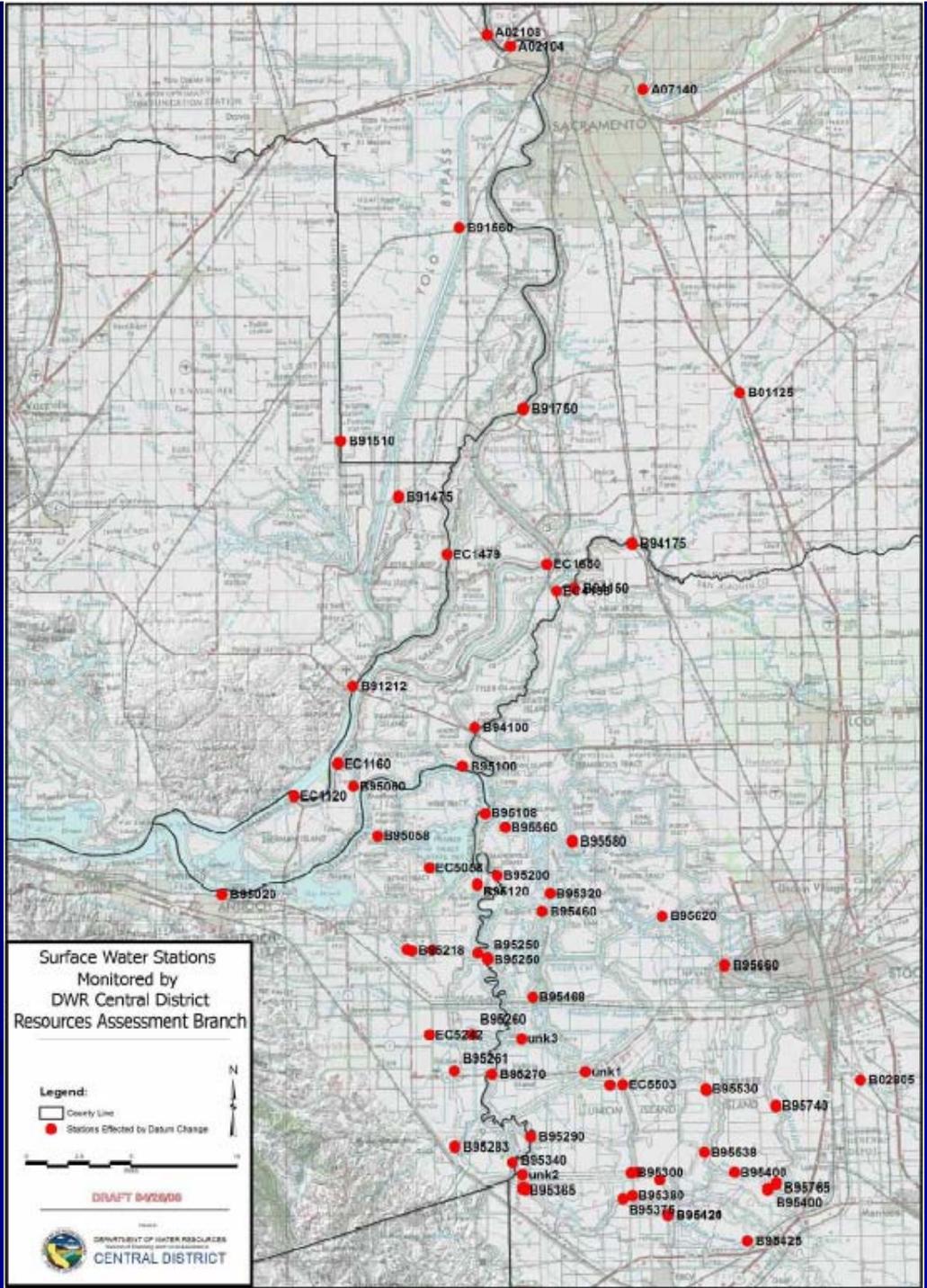
This last link will take you to a table that lists all of our Delta tide monitoring stations along with latitude/longitude and correction factors to convert from the NGVD29 to NAVD88: [Table 1](#)

Surface Water:

- ◆ [What's New](#)
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 - ◇ [Velocity-Area Based Flow Stations](#)
 - ◇ [Stage Based Flow Stations](#)
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- ◆ [DWR Employment](#)
- ◆ [CA District Map](#)



NGS Adjustments to NAVD88 Survey - revised 09/06/2006

Station	Transmitted to		Lat	Long	CDEC Id	New Adjustment values based on NGS Elevations to get NAVD88 back to old NGVD29 values ^a
	CDEC	Station Name				
A02104	N	Sacramento River at Bryte	38° 36' 00"	121° 32' 23"		-0.54
B91212	Y	Sacramento River at Rio Vista	38° 09' 35"	121° 41' 11"	RVB	-0.6
B91510	Y	Yolo Bypass at Liberty Island	38° 19' 45"	121° 41' 38"	LIR	2.59
B91560	Y	Yolo Bypass near Lisbon	38° 28' 30"	121° 35' 14"	LIS	-1.04
B91650	N	Sacramento River at Walnut Cr.	38° 14' 32"	121° 31' 00"		-0.36
B91750	N	Sacramento River at Snodgrass	38° 20' 59"	121° 32' 00"		-0.45
B94100	N	Georgiana Slough at Moke. R	38° 07' 48"	121° 34' 49"		-0.46
B94150	N	Mokelumne R at New Hope	38° 13' 31"	121° 29' 27"		-0.41
B94175	Y	Mokelumne R at Thornton	38° 15' 19"	121° 26' 24"	BEN	-0.75
B95020	Y	San Joaquin at Antioch	38° 01' 02"	121° 48' 11"	ANH	-0.11
B95060	N	Threemile Sl at SJ River	38° 05' 24"	121° 41' 13"		-0.66
B95100	N	San Joaquin River at San Andreas	38° 06' 12"	121° 35' 29"		-0.27
B95220	Y	Rock Slough at CC Canal	37° 58' 35"	121° 38' 15"	RSL	-0.45
B95250	Y	Old River at Bacon Island	37° 58' 09"	121° 34' 19"	BAC	-0.59
B95260	Y	Discovery Bay at Indian Sl	37° 55' 04"	121° 35' 12"	DBI	-0.36
B95261	Y	Discovery Bay at Disc Bay Blvd	37° 53' 34"	121° 36' 09"	DBD	-0.31
B95270	Y	Old River nr Byron	37° 53' 25"	121° 34' 12"	ORB	-0.28
B95283	Y	Italian Sl Headwater nr Byron	37° 50' 25"	121° 36' 11"	ISH	-0.38
B95290	Y	Old River at Coney Island	37° 50' 46"	121° 32' 13"	CIS	-0.66
B95300	Y	Grantline Canal at Tracy Blvd.	37° 49' 13"	121° 27' 00"	GCT	-0.58
B95310	N	Grantline Canal above Dam	37° 49' 10"	121° 26' 53"		-0.58
B95325	Y	Doughty Cut above GLC	37° 48' 53"	121° 25' 32"	DGL	-0.53
B95340	N	Old River at Clifton Court	37° 49' 43"	121° 33' 11"		-0.49
B95365	Y	Old River near DMC (below)	37° 48' 40"	121° 32' 38"	OBD	-0.42
B95366	Y	Old River near DMC (above)	37° 48' 38"	121° 32' 32"	OAB	-0.42
B95380	Y	Old River at Tracy Road	37° 48' 18"	121° 26' 58"	OLD	-0.49
B95400	Y	Old River at Head	37° 48' 27"	121° 19' 53"	OHI	-0.52
B95420	Y	Tom Paine Slough above Mouth	37° 47' 26"	121° 25' 07"	TPS	-0.48
B95421	Y	Tom Paine above Intake	37° 47' 25"	121° 25' 07"	TPI	-0.48
B95425	Y	Tom Paine at P.P. #6	37° 46' 20"	121° 21' 00"	TPP	***
B95460	N	Middle River at Bacon Island	38° 00' 06"	121° 31' 26"		-0.27
B95468	N	Middle River at Middle River	37° 56' 34"	121° 31' 59"		-0.2
B95500	N	Middle River at Borden Hwy	37° 53' 27"	121° 29' 18"		-0.47
B95503	Y	Middle River at Tracy Road	37° 52' 53"	121° 27' 22"	MTB	-0.54
B95530	Y	Middle River at Howard Rd.	37° 52' 38"	121° 23' 01"	MHR	-0.79
B95540	N	Middle River at Mowry	37° 50' 07"	121° 23' 01"		-0.71
B95580	Y	San Joaquin at Venice Isl	38° 03' 00"	121° 29' 48"	VNI	-0.35
B95620	N	San Joaquin at Rindge Tract	37° 59' 50"	121° 25' 10"		-0.5
B95660	Y	Stockton Ship Channel at Burns	37° 57' 45"	121° 21' 56"	RRI	-0.87
B95740	Y	San Joaquin at Brandt Bridge	37° 51' 54"	121° 19' 23"	BDT	-0.73
B95765	Y	San Joaquin River below Old River	37° 48' 40"	121° 19' 27"	SJL	-0.73
B95820	Y	San Joaquin River at Mossdale Bridge	37° 47' 10"	121° 18' 21"	MSD	2.38
EOB80261551	Y	Sacramento River at Mallard Island			MAL	2.68
EOB80172083	Y	Martinez			MRZ	2.68

* The Gage Height correction is the difference between NGVD29 datum + 3 feet and NAVD 88 datum.

** Previously set to M.S.L.

*** Station re-established and set to NAVD 88 datum

^a(NAVD 88 value) - (New adjustment value) = (Old NGVD29 value)

(NGVD 29 value) + (New adjustment value) = (New NAVD 88)

NOTES:

B94175 - Maps & Surveys BM destroyed. USED N.G.S. elevation for BM N463 for this station.

B95290 - Maps & Surveys NAVD-88 elevation of 6/15/04 used for this station.

B95425 - N.G.S. elevation for AI7593 used for establishment of new station. Not associated with GPS Survey value

California Department of Water Resources

Division of Flood Management

California Data Exchange Center

ACCESS POINT TO THE DEPARTMENT OF WATER RESOURCES OPERATIONAL HYDROLOGIC DATA

Datum Change

The logo for the California Data Exchange Center (CDEC) is centered in a blue rectangular box with a 3D effect. The letters "CDEC" are in a light blue, serif font. A dark blue play button icon is superimposed over the "D" and "E". A horizontal line is drawn under the "CDEC" text.

CDEC

Educating Stage/Tide Data Users

■ Website information

- www.cd.water.ca.gov/surface_water/surface_water.cfm
- www.cdec.water.ca.gov/queryStation.html

■ Letters to all Delta Stakeholders

■ Contacting the Media

■ Creating posters for Delta businesses

■ Possible workshops

Point of Contacts

Bob Nozuka

Central District, DWR

(916) 651-0759

bobn@water.ca.gov

Mike Mosbacher

Central District, DWR

(916) 651-0777

mmosbach@water.ca.gov

New Bench mark monuments



Brass Cap Bench Mark
Set at each station