VERS MODERNIZATION UPDATE

Wednesday, April 19th, 1:00 – 2:00

Dena Williams

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EXECUTIVE SUMMARY

VISITATION ESTIMATION REPORTING SYSTEM (VERS) MODERNIZATION

- The new VERS visitation estimations are **considerably lower** than those used in the past (**about 250 M versus 360/370 M**).
- **The numbers of visits at Corps parks/lakes have actually not decreased. The new numbers are the result of improved methods of calculation of visits.**
- The VERS system employs **consistent and more refined methods** of estimating visitation applied systematically across the nation.
- The VERS system now **minimizes previous variations** between regions due to differing measurement methods.
- All federal land management agencies have or are upgrading their visitation estimation methods. The Corps is involved in the FRC visitation study to look for ways to improve consistency across federal agencies.

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USACE VISITATION ESTIMATION EVOLUTION

50’s-60’s
- Individual project reporting, published to Bureau of Outdoor Recreation reports
- No procedural documentation

70’s-80’s
- ERDC research recommends approach; meter with survey
- Procedures implemented by project, no central authority

90’s-2000’s
- Initial implementation of VERS
- Standardized tools and procedures
- Data collected and applied by project; calculated locally then reported to central system

2013 to present
- Sampling at select recreation areas --> applied nationally
- Central calculation & reporting system

WHAT KINDS OF VISITATION DOES VERS MEASURE?

- VERS measures :
  - Day use visits
  - Camping visits

- Measurements are taken for:
  - Corps Managed Recreation Areas
  - Outgranted Recreation Areas
  - Dispersed Use (Community Docks, private docks, and walk-ins from adjacent households)

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DAY USE VISITATION ESTIMATION

- Corps Managed Metered Areas
  - Convert meter volume counts into vehicle estimates
  - Apply national load factors weights based on OMBIL subtypes and facilities behind the counters
  - Rule based evaluations for issues not included in the 18 survey data site type load factors, distribution across multiple PSAs behind meter, etc.
- Day use Estimates for Non-metered Areas
  - Estimation method based on parking spaces to visits ratio
  - Tallies for visitor centers
- Visitors to Campers
  - For unmetered multipurpose areas and group or free campgrounds, provide estimates for campgrounds that allow visitors to campers

Visits – *a visit is defined as the entry by one person to a Corps project for recreation purposes for any length of time – 15 minutes to 14 days*

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METER READINGS TO DAY USE VISITS

- For metered sites:
  - Convert meter reading to vehicle count (Inductive Loop), segment (Infrared), or tally (Pneumatic Hose)
    - Vehicle Count/Segment/Talley = ((Meter Reading ➕ Traffic Lanes Monitored) ➕ Increment Count) ✖ Total Axle or Segment Load Factor from Table.

      Ex: Water Access Point, Meter Reading, 1000, Infrared Meter, Two way traffic monitored, Increment Count 1

      ((1000/2)/1) * 0.7068 = 353.4
  - Convert Vehicle Count/Segment/Talley to Recreation Vehicle Counts
    - Recreation Vehicle Count = Vehicle Count/Segment/Talley ✖ % Rec Vehicle Load Factors depending on meter type

      Ex: 380.3 * 0.6306 = 222.9
  - Apply Recreation Vehicle Counts to appropriate load factors
    - Day Use Visits = Recreation Vehicle Count ✖ Party Size Load Factor

      Ex: 268.8 * 2.0581 = 459

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LOAD FACTORS USED FOR CALCULATING DAY USE VISITS

VERS Survey Assignment	Site Type	Campground Class	Swim Beach	Ramp	Load Factors						
					RecVehPer RecAxle	RecVehPer RecIncrement	PctRecVeh	PctRec Axles	PctRec Increment	AreaDayuse PartySize	AreaHrs
					Pneumatic Hose	Infra-red/ Magnetometer	Magnetic Loop	Pneumatic Hose	Infra-red/ Magnetometer	All Meter Types	All Meter Types
WP/R	Water access point			Yes	0.4037	0.7068	0.5848	0.6112	0.6306	2.0581	3.2439
LP	Land access point				0.4993	0.9987	0.7485	0.7488	0.7481	1.6578	0.9797
SVA	Scenic viewing area				0.4997	0.9917	0.5485	0.5473	0.5450	1.7134	0.8997
DU/NB/NR	Day use		No	No	0.4947	0.9692	0.5987	0.5941	0.5931	2.2155	1.8465
DU/NB/R	Day use		No	Yes	0.4400	0.8139	0.6397	0.6577	0.6671	2.0528	2.5423
DU/B/NR	Day use		Yes	No	0.4994	0.9738	0.6190	0.6147	0.6188	3.1411	3.2353
DU/B/R	Day use		Yes	Yes	0.4509	0.8465	0.6231	0.6337	0.6417	2.6608	3.0164
MP/LC/NB/NR	Multipurpose	Low	No	No	0.4315	0.7879	0.5183	0.5308	0.5435	2.2543	2.7097
MP/LC/NB/R	Multipurpose	Low	No	Yes	0.4315	0.7879	0.5183	0.5308	0.5435	2.2543	2.7097
MP/LC/B/NR	Multipurpose	Low	Yes	No	0.4315	0.7879	0.5183	0.5308	0.5435	2.2543	2.7097
MP/LC/B/R	Multipurpose	Low	Yes	Yes	0.4315	0.7879	0.5183	0.5308	0.5435	2.2543	2.7097
MP/HC/NB/NR	Multipurpose	High	No	No	0.4213	0.7861	0.3772	0.3877	0.3957	2.3105	2.7445
MP/HC/NB/R	Multipurpose	High	No	Yes	0.4213	0.7861	0.3772	0.3877	0.3957	2.3105	2.7445
MP/HC/B/NR	Multipurpose	High	Yes	No	0.4453	0.8499	0.3869	0.3908	0.3961	2.5397	2.7216
MP/HC/B/R	Multipurpose	High	Yes	Yes	0.4453	0.8499	0.3869	0.3908	0.3961	2.5397	2.7216

*Condensed Version of Official Load Factor Table.

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CAMPING VISITATION ESTIMATION

- NRRS camping from reservation data
  - Reservation data includes specific information needed to calculate visitation
  - Divided into three subsets – non-group, group, and day use
  - Some records were reclassified, excluded, or amended using rule based approach
- Non-NRRS camping estimated based on CEFMS Monthly revenue for camping
  - Monthly revenue amount converted into camping nights and visitation estimated using factors developed from VERS and NRRS data
  - Visitation estimate is distributed equally across PSAs utilizing CEFMS that month
- Free Camping estimated based on sites
  - Campsite count and operating season define the site nights available and visitation is estimated using factors developed from NRRS data

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NRRS CONSIDERATIONS

- Rule based evaluation of reservations for inclusion analysis
- Only Active reservations are analyzed. Refunds, Cancellations and No Shows are not included. Transaction must have designation as ACTIVE.
- Point of Sale is not included in Analysis
- Further classified into Group, Non-Group and Day use reservations

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OVERNIGHT VISITS ESTIMATED FROM CEFMS

- Overnight revenue reported at the Project level Monthly
- Revenue is adjusted based on rate of discounted fees (increased to offset discounts – from NRRS)
- Estimated camping nights calculated based on average fees reported in VERS.
- Estimated camping trips calculated based on length of stay averages in NRRS
- Estimated visits calculated based on occupant averages in NRRS
- Visits, recdays and visitor hours distributed equally among PSAs using CEFMS at project (# of PSAs can vary based on season)

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FREE CAMPING ESTIMATES

- Only known value is number of camping sites reported in OMBIL and period of time the sites are available as reported in VERS

- Averages from NRRS are used as variable in calculation of estimates
  - campground occupancy rate (reduced to 50%)
  - occupants per site
  - length of stay are used to calculate visits.

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OUTGRANT ESTIMATES

- Estimates Provided by 3rd Party
  - Person counts are accepted for day use and overnight
  - Vehicle – CE load factor applied to compute estimates for day use
- Estimates provided by CE traffic meters for day use
  - Meter estimates– must have all supporting meter information and CE managed metering rules are applied
- Overnight Use
  - Estimates follow Free camping rules
    - ➢Procedures follow Free Camping procedures used in Corps managed areas
    - ➢Info on # sites (includes campsites, cabins, inn rooms, etc.), period of availability
    - ➢Averages from NRRS data created for occupancy rate, occupants per site and length of stay

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DISPERSED USE

- Three categories of dispersed use:
  - Community Dock Owners
    - Based on survey results and Corps inventory data (OMBIL), account for boats Served Community Docks
  - Private Dock Permits
    - Based on survey results and Corps inventory data (OMBIL), account for Individual and Consolidated Individual Permits
  - Adjacent Households walk-ins
    - Based on survey results and GIS work/Census data, account for adjacent households walk-ins
    - Include households within 500 meters, inversely proportional to the square of the distance to Corps boundaries.

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WHY NUMBERS CHANGED FROM THE FY 12 TO FY14/FY15

- We froze visitation numbers in FY 12 in order to fully implement the VERS estimation processes and instruments over several years.

- During the implementation the following changes were made:
  - There was an update of the criteria for defining recreation areas (PSA) and therefore the places where visitation was to be measured changed (splitting, lumping, changing subtypes, etc.)
  - Meter location changed (moved to interior road compared to main road, adding meters where none existed)
  - Upgrades of meter types, traffic directions, increment counts, etc.
  - Addressed places where meter readings were missing
  - Public survey locations changed to national sample from project based
  - Camping visits are measured from NRRS and CEFMS transaction/fee data instead of meters
  - Rule-Based approaches applied

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METERS AND MONITORING METHODS

FY12 VERS Monitoring Methods*	
	Project Areas
Magnetic Loop	4187
Pneumatic Hose	1333
Grand Total	**5520**

FY 15 forward:

- Meter best practices documented and training
- New surveys and results (load factors) to apply to counters
- Rule-based assignment of load factors based on site type
- Consistency across all projects for non-metered sites

FY15 Monitoring Method & Types		Total
Vehicle (4063 Total)	Magnetic Loop	1,222
	Pneumatic Hose	1,320
	Laser	364
	Magnetometers	1,125
Pedestrian	Magnetic	2
	Laser	106
Tally	People	54
	Vehicle	12
NRRS		553
CEFMS		289
Free Camping		148
3rd Party	Person	130
	Vehicle	83
	Meter	47
Estimated		900
Multiple Monitoring Methods		140
Grand Total**		**6,495**

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METERS AND MONITORING METHODS

FY15 VERS Monitoring Methods							
	Total VERS Methods	Physical Meters	Revenue Methods	Free Camping	Tally Counts	Provided by 3rd Party	Estimated (Parking Ratio)
Great Lakes and Ohio River	999	729	77	5	6	32	165
Mississippi Valley	1082	708	144	32	13	11	207
North Atlantic	247	207	8	0	5	11	21
Northwestern	1149	876	109	77	18	21	89
Pacific Ocean	5	1	0	0	2	0	2
South Atlantic	906	671	97	3	7	45	94
South Pacific	198	127	34	0	5	17	20
Southwestern	1610	862	375	31	10	123	307
Grand Total	**6196**	**4181**	**844**	**148**	**66**	**260**	**905**

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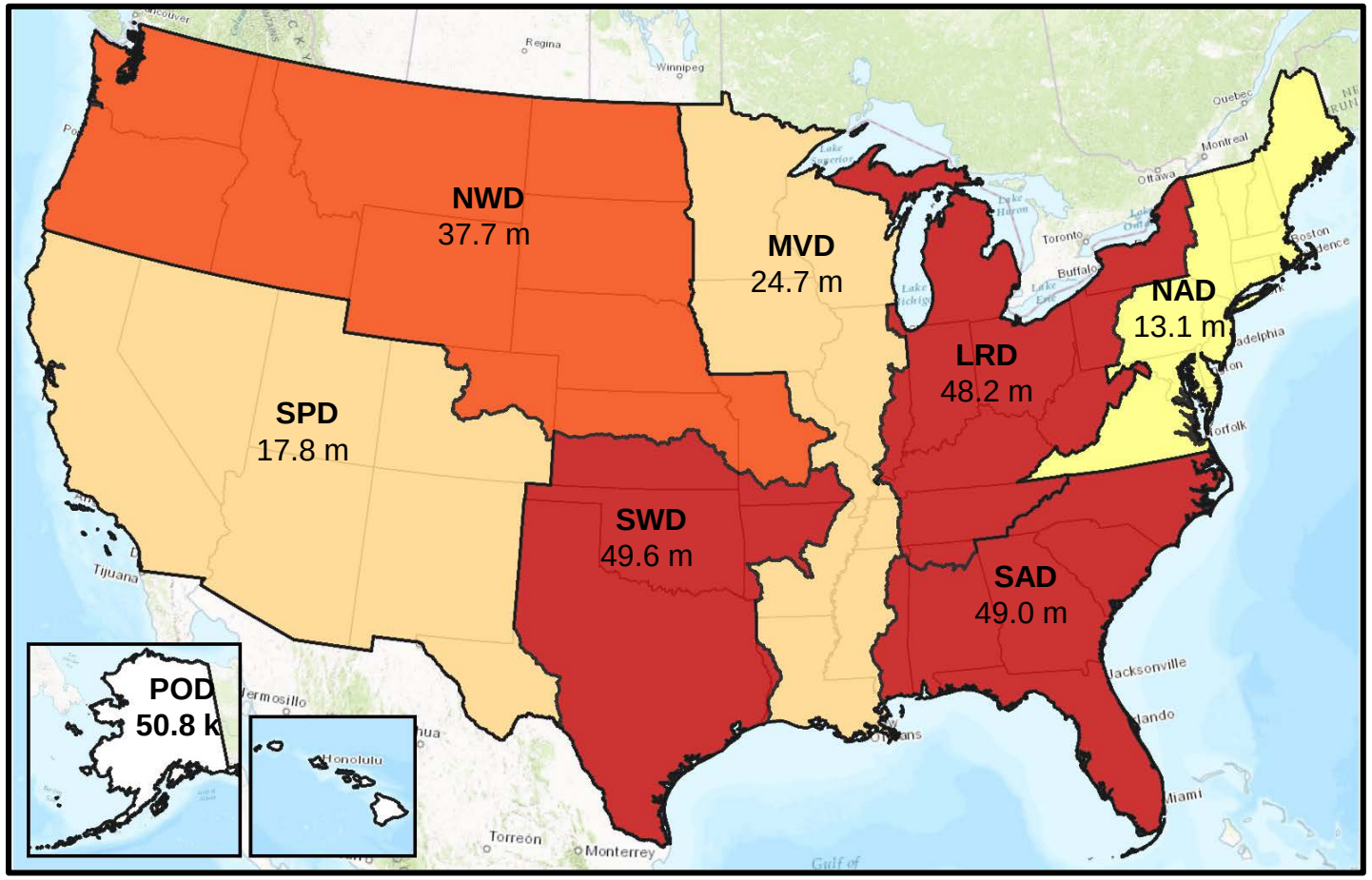
FY15 Total Visitation by Division



Div.	Lakes	Parks	Rec. Visits
LRD	100	892	48,253,267
MVD	46	896	24,744,364
NAD	47	220	13,165,769
NWD	63	746	37,756,388
POD	2	7	50,896
SAD	23	893	49,041,620
SPD	35	202	17,890,177
SWD	87	1229	49,660,714
Total	**403**	**5085**	**240,563,196**

Map Legend
Total Visits

- < 1 million visits
- 1-15 million visits
- 15-30 million visits
- 30-45 million visits
- Over 45 million visits

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TOTAL VISITATION FOR FY15 BY DIVISION

FY15 Total Visits	Corps managed	Outgrant	Dispersed Use	Total
LRD	16,106,466	19,440,882	12,705,919	48,253,267
MVD	14,101,017	5,216,581	5,426,766	24,744,364
NAD	7,349,613	1,821,556	3,994,600	13,165,769
NWD	13,602,700	17,563,595	6,590,093	37,756,388
POD	47,021	-	3,875	50,896
SAD	11,031,974	18,755,653	19,253,993	49,041,620
SPD	2,976,516	13,695,683	1,217,978	17,890,177
SWD	16,165,461	17,125,223	16,370,030	49,660,714
Grand Total	**81,380,768**	**93,619,173**	**65,563,255**	**240,563,196**

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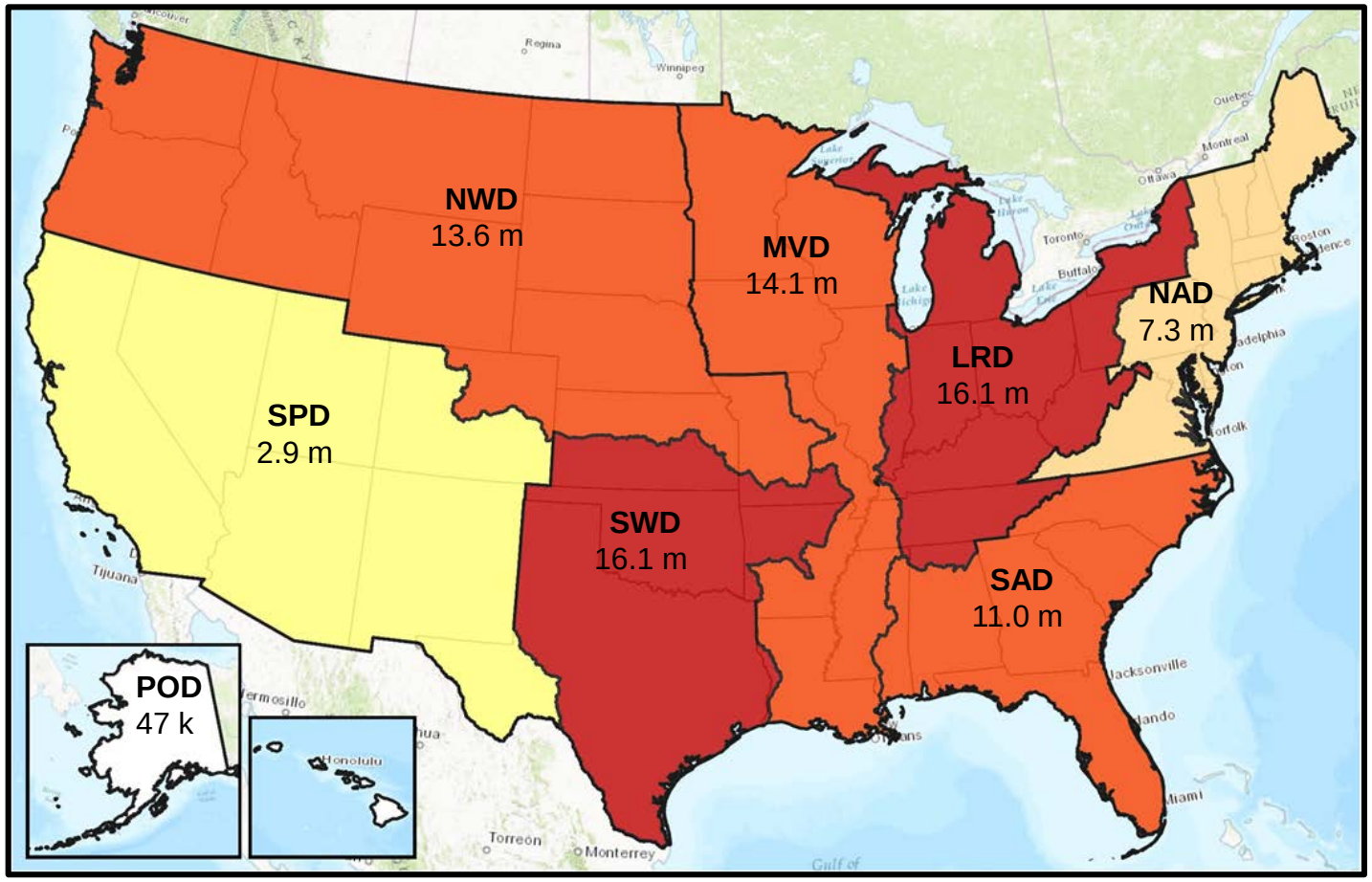
FY15 Total Corps Managed Visitation by Division



Div.	Lakes	Parks	Rec. Visits
LRD	96	430	16,106,466
MVD	45	625	14,101,017
NAD	39	170	7,349,613
NWD	55	396	13,602,700
POD	2	5	47,021
SAD	22	465	11,031,974
SPD	23	157	2,976,516
SWD	79	634	16,165,461
Total	**361**	**2882**	**81,380,768**

Map Legend
Total Visits

- < 1 million visits
- 1-5 million visits
- 5-10 million visits
- 10-15 million visits
- Over 15 million visits

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FY15 VISITATION BY TYPES OF USE
CORPS MANAGED

FY15 Corps Managed	Day Use	Camping	Total
LRD	15,775,607	330,859	16,106,466
MVD	13,640,324	460,693	14,101,017
NAD	7,283,776	65,837	7,349,613
NWD	13,182,797	419,903	13,602,700
POD	47,021	-	47,021
SAD	10,557,736	474,238	11,031,974
SPD	2,874,484	102,032	2,976,516
SWD	15,106,979	1,058,482	16,165,461
Grand Total	78,468,724	2,912,044	81,380,768

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FY15 VS FY14 CORPS MANAGED VISITATION

Corps Managed	Day Use		Camping		Total	
	FY15	FY12	FY15	FY12	FY15	FY12
LRD	15,775,607	24,985,455	330,859	1,343,136	16,106,466	26,328,591
MVD	13,640,324	21,104,694	460,693	1,744,832	14,101,017	22,849,526
NAD	7,283,776	5,854,198	65,837	98,238	7,349,613	5,952,436
NWD	13,182,797	16,340,384	419,903	1,253,417	13,602,700	17,593,801
POD	47,021	131,754	-	-	47,021	131,754
SAD	10,557,736	13,081,496	474,238	939,421	11,031,974	14,020,917
SPD	2,874,484	3,799,190	102,032	228,071	2,976,516	4,017,261
SWD	15,106,979	24,676,053	1,058,482	3,162,943	16,165,461	27,838,997
Grand Total	**78,468,724**	**109,973,225**	**2,912,044**	**8,770,058**	**81,380,768**	**118,743,283**

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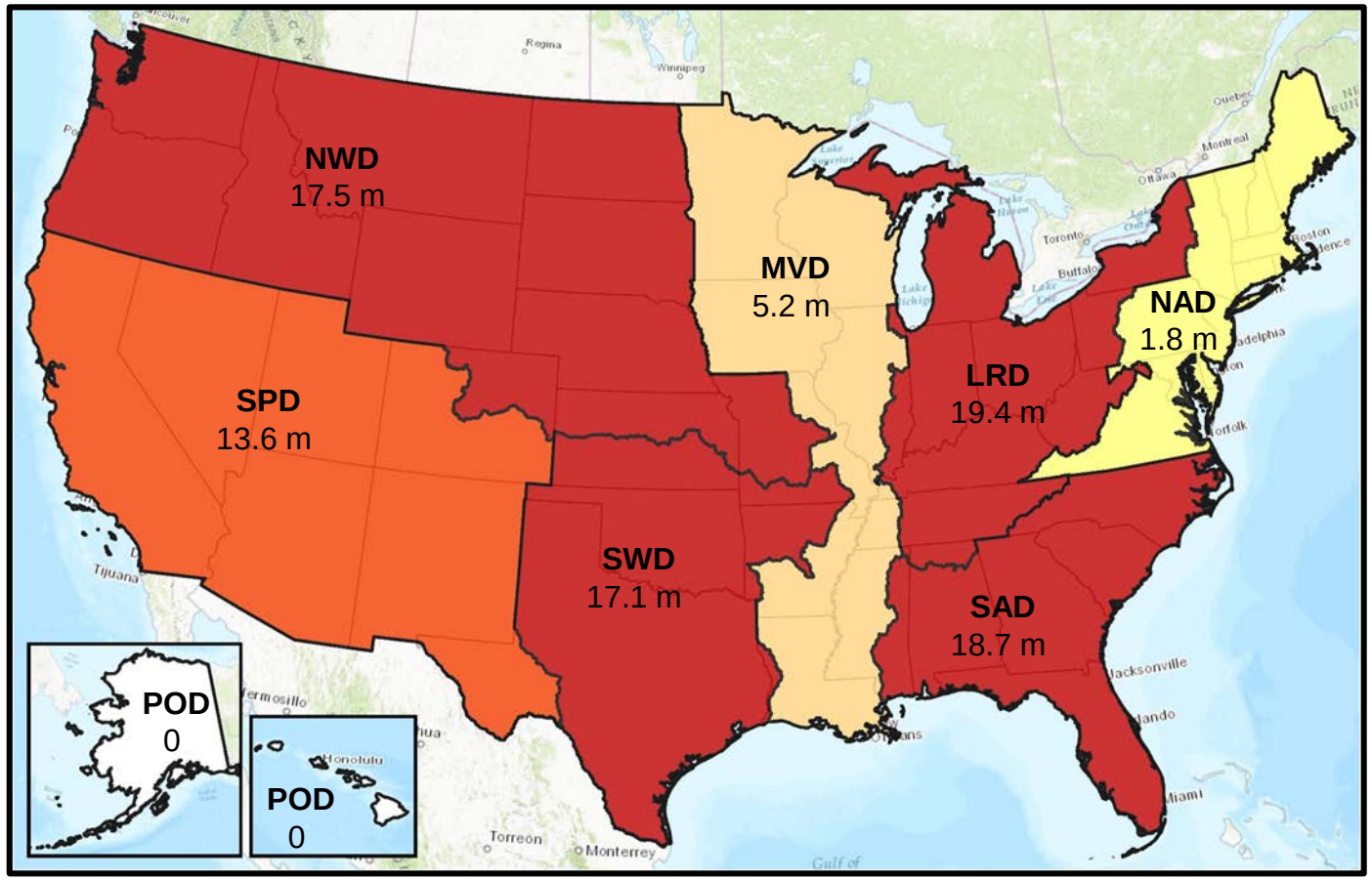
FY15 Total Outgrant Visitation by Division



Div.	Lakes	Parks	Rec. Visits
LRD	77	462	19,440,822
MVD	27	271	5,216,581
NAD	20	50	1,821,566
NWD	51	350	17,563,595
POD	0	2	0
SAD	22	428	18,755,563
SPD	20	45	13,695,683
SWD	64	595	17,125,223
Total	**281**	**2203**	**93,619,173**

Map Legend
Total Visits

- < 1 million visits
- 1-5 million visits
- 5-10 million visits
- 10-15 million visits
- Over 15 million visits

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FY15 VISITATION BY TYPES OF USE
OUTGRANT AREAS

FY15 Outgrant	Day Use	Camping	Total
LRD	18,993,585	447,297	19,440,882
MVD	5,069,954	146,627	5,216,581
NAD	1,755,944	65,612	1,821,556
NWD	17,160,457	403,138	17,563,595
POD	-	-	-
SAD	18,323,731	431,922	18,755,653
SPD	13,677,670	18,013	13,695,683
SWD	16,674,275	450,948	17,125,223
Grand Total	91,655,616	1,963,557	93,619,173

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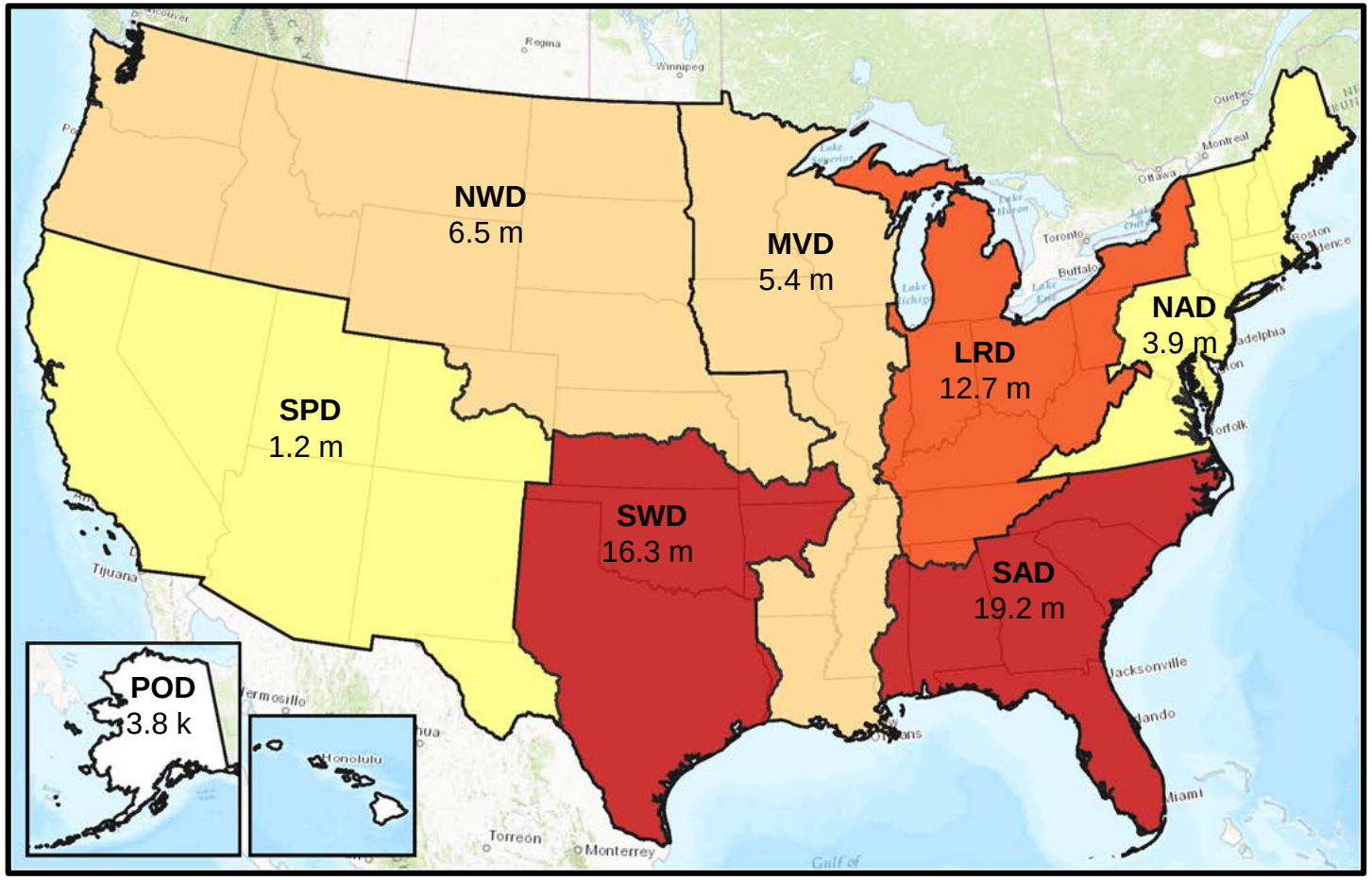
FY15 TOTAL DISPERSED VISITATION BY DIVISION



Div.	Lakes	Dispersed Visits
LRD	100	12,705,919
MVD	46	5,426,766
NAD	46	3,994,600
NWD	63	6,590,093
POD	1	3,875
SAD	23	19,253,993
SPD	30	1,217,978
SWD	84	16,370,030
Total	**393**	**65,563,255**

Map Legend
Total Visits

- < 1 million visits
- 1-5 million visits
- 5-10 million visits
- 10-15 million visits
- Over 15 million visits

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FY15 VISITATION BY TYPES OF USE-
PROJECT DISPERSED DAY USE

FY15 Dispersed	Community Dock	Private Dock	Walk ins	Total
LRD	2,880,313	2,348,879	7,476,728	12,705,919
MVD	91,734	588,845	4,746,187	5,426,766
NAD	-	-	3,994,600	3,994,600
NWD	329,461	690,440	5,570,191	6,590,093
POD	-	-	3,875	3,875
SAD	2,163,832	12,945,655	4,144,506	19,253,993
SPD	-	6,908	1,211,070	1,217,978
SWD	6,072,999	2,558,571	7,738,460	16,370,030
Grand Total	11,538,339	19,139,299	34,885,618	65,563,255

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VISITATION REPORTED BY OTHER AGENCIES

Agency	1996-97 Visits (M)*	2000 Visits (M)**	2012 Visits (M)****
USFS	859	209***	161
USACE	375	376	360 (2015 est 250)
NPS	275**	286	283 (2015 est >350)
BLM	61	?	59
USF&WS	25	38	47
BOR	80	?	28
TVA	112	?	?
NOAA	?	?	Not Reported

*National Recreation Lakes Study 1999
**Various Agency Sources
***Different than measured site visits of 267
****Federal Recreation Council Outdoor Recreation: Jobs & Income

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OTHER AGENCY VISITATION ESTIMATION PROCESSES

Agency	Methods
NPS	• Tally/entrance station, metered (rec and non rec), estimates (variety of methods, based on survey data), fixed estimate (flat rate each month, based on survey data) • Traffic Volume: over 200 meters, many feed data into metered visitation estimates
FS	• Survey data estimates both volume and visit characteristics paired with meter count or manual count. 5-year cycle of surveys • Viewing corridor (sightseers) that spend minimum of 15 minutes within NF
FWS	• Metered, direct observation, tally (registration, permit, entrance station), estimation (observation, patrols, survey)
BLM	• Metered, fee data based, estimates (observation formulas)
BOR	• Metered, camp hosts, fee data based

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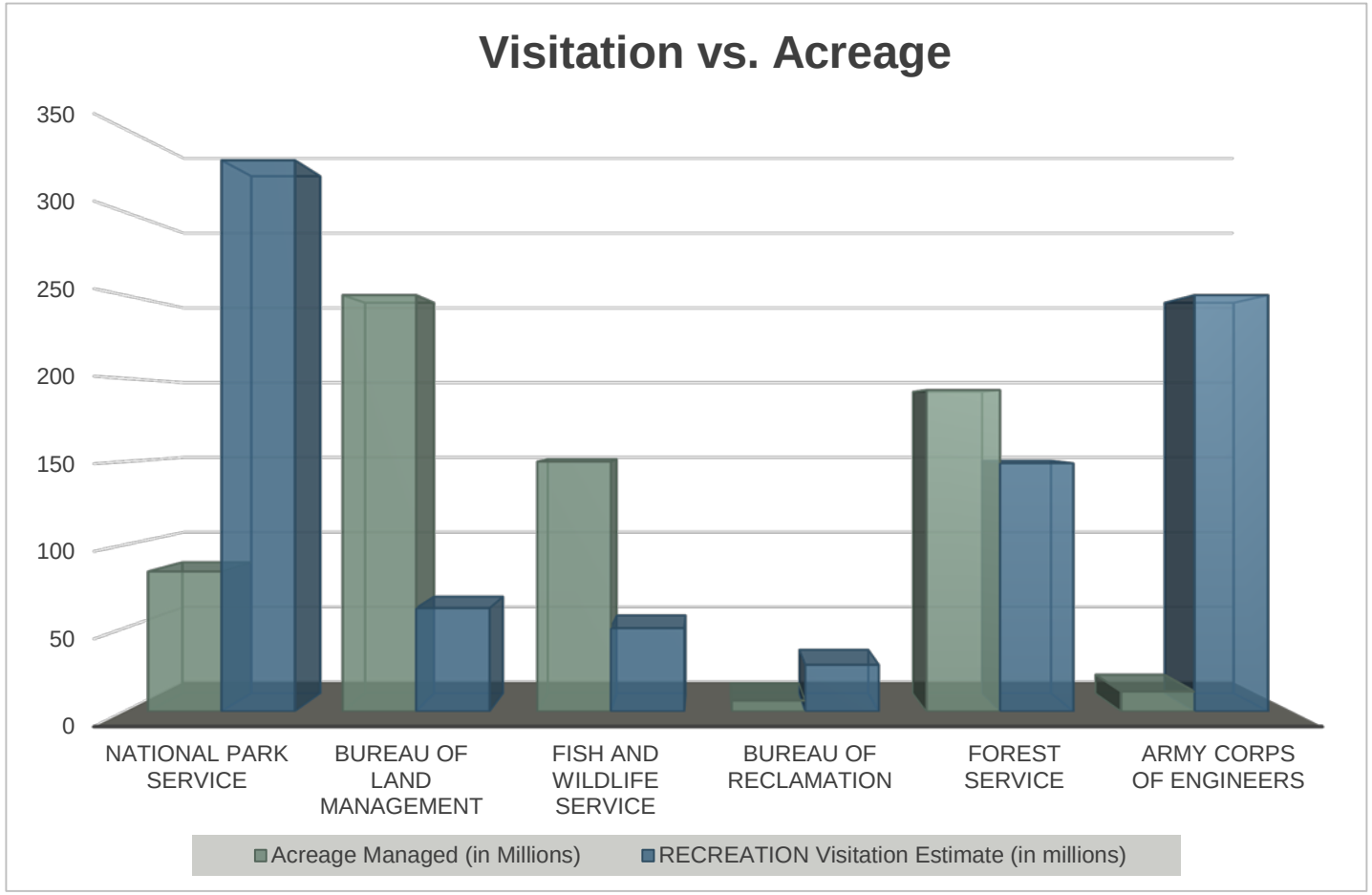
ANNUAL RECREATION VISITATION BY AGENCY



Agency	Acreage Managed (in Millions)	RECREATION Visitation Estimate (in millions)
National Park Service	84	331
Bureau of Land Management	250	62
Fish and Wildlife Service	150	50
Bureau of Reclamation	6.5	28
Forest Service	193	149
Army Corps of Engineers	12	250
Total	695.5	870

Sources:

Acreage: NPS (2016a); BLM (2016a); Dietsch et al. (2013); Reclamation (2015); CRS (2014); Kathleen Perales (USACE), personal communication, February 2017.

Recreation Visitation Estimate (for most recent year available): NPS (2016b); BLM (2016b); Phil LePelch (USFWS), personal communication, December 2016; Jerome Jackson (Reclamation), personal communication, January 2017; USFS (2016a); and Kathleen Perales, personal communication, February 2017.

Notes:

A. USACE's 2016 visitation estimate is lower than publicly-available estimates for recent years due to changes in data collection methods, as described in Chapter 2.

Industrial Economics, Incorporated (March 2017). Draft Final Report Estimating Recreational Visitation to Federally-Managed Lands.

ISSUES ENCOUNTERED ALONG THE WAY

- Embedded PSAs/meters
- Missing readings
- Extremely high readings
- Embedded PSAs
- CE offices behind the meter
- Visitors to Campers
- Estimations – no parking on government property
- Buses and outfitters – party size
- Visitation for closed areas
- No meter readings and no corrections submitted
- Not all OMBIL PSAs identified in VERS
- Walk on visitation with no measuring device
- % Rec Vehicles for rural areas
- Non Transient Trailers or Condominiums in lease areas
- Subdivisions behind the meter
- Incorrect OMBIL data
- Impacts on other databases (ex: PSA Matrix Tool, RecAssessment)

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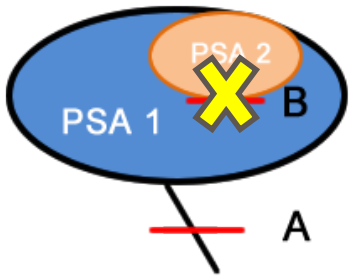
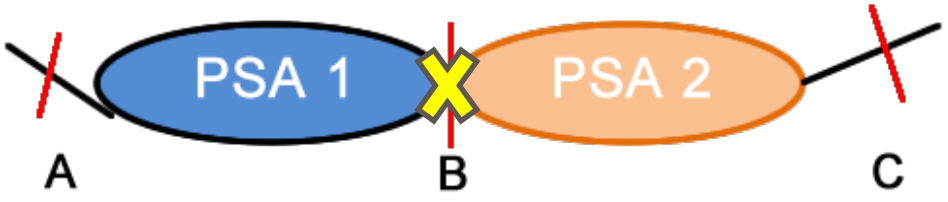
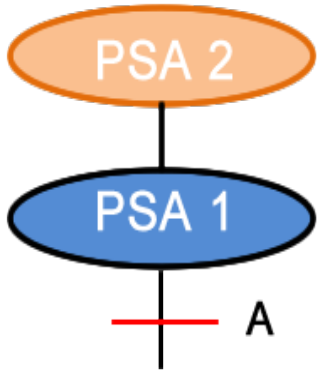
EMBEDDED PSAS

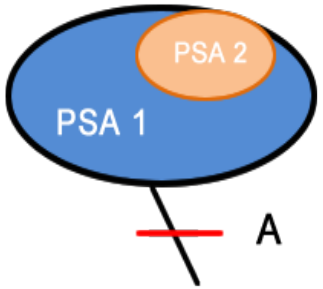
❖ **NOT** recommended:

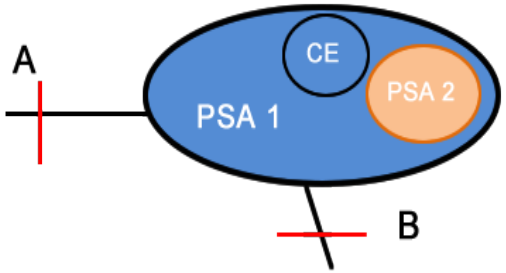


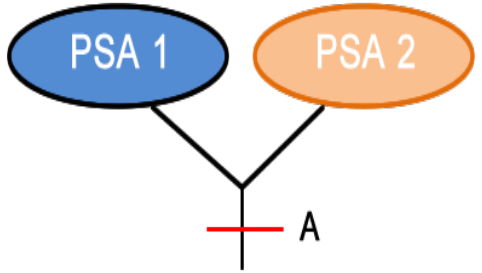


❖ **Recommended**:









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ALLOCATIONS TO EMBEDDED PSAS

Certain meter locations or facility settings create a situation where another PSA is embedded within a primary PSA. In these cases, where the secondary PSA is not also metered, an allocation is made as follows:

- Between two or more CE managed PSAs - 100% of visitation divided between PSAs based on ratio of parking spaces. Ex PSA 1 had 25 spaces and PSA 2 has 75 spaces. 75% of the calculated visitation would go to PSA 2. If more than two PSAs create percent based on parking in all PSAs.
- Between CE managed and other Governmental PSA - 100% of visitation divided between PSAs based on ratio of parking spaces reported in OMBIL.
- Between CE managed and a Marina – Visitation Allocated per survey data. CE Water access point and marina = 49% to CE Water Access Point to 62% to marina. Day use/multipurpose and marina = 84% to CE day use/multipurpose and 24% to marina. If more than two CE PSAs, then allocate to marina first and split the rest between the two CE PSAs.

Based on review of FY14 numbers, the recommended setup for embedded PSAs is to NOT meter the internal PSA due to internal movement of visitors within the area which may cause a higher meter reading than the entrance meter.

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VERS GUIDELINES

- OMBIL is the official database of record. The “Final Report and Adopted Recommendations of the OMBIL PSA Product Delivery Team, 7 October 2011” establishes requirements for recreation PSAs.

- Project Site Areas, Managing Agencies, Area Subtypes, and Facilities will be pulled directly from the OMBIL database.

- To receive camping/overnight visitation, the OMBIL subtype must be either campground, multipurpose areas, or marina and/or resort.

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VERS GUIDELINES

- Camping/overnight visitation will no longer be calculated using a vehicle meter.

- If area is only open seasonally (ex: April through September), then no visitation will be calculated during the closed months .

- If our outgrant partner owns the vehicle or pedestrian meter, then the method should be meter and identify as belonging to partner. All meter information (meter type, increment count, direction of traffic, monitoring 1 or 2 lanes, etc.) must be entered into the VERS system to be able to calculate visitation.

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VERS GUIDELINES

- Estimates will be calculated using several methods. Supporting subtype and facility data must be available in OMBIL.
  - Missing 1 month meter reading, estimate will be calculated using a straight line average between the previous month and following month meter readings. Then appropriate load factors will be applied.
  - If missing meter readings for two or more consecutive months, then visitation will be calculated utilizing the visits to parking space ratio formula. No load factors will be applied.
  - If method is identified as estimate, then the visits to parking space ratio formula will be used.

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VERS GUIDELINES

- Projects should not be making calculations (ex: adding meters together, applying a percentage to the meter reading, etc.) outside of the VERS program. All formulas will be ran utilizing the VERS software.

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WHAT'S NEXT?

- FY16 Monitoring Method Review Continues
  - ❑Corrections being processed
  - ❑Additional/Missing PSAs to be Added as Estimated Method
    - ✓District/Field Review
- FY16 Meter Reading Entry
- FY17 Physical Meter Check
  - ❑New meters submitted through FY16 review will be added
    - ✓Field review of the new ones
- FY17 Meter Reading Entry
- Surveys planned for Spring and Summer 2017
- Mapping -- MSU working on an interface for Corps to use to map PSAs

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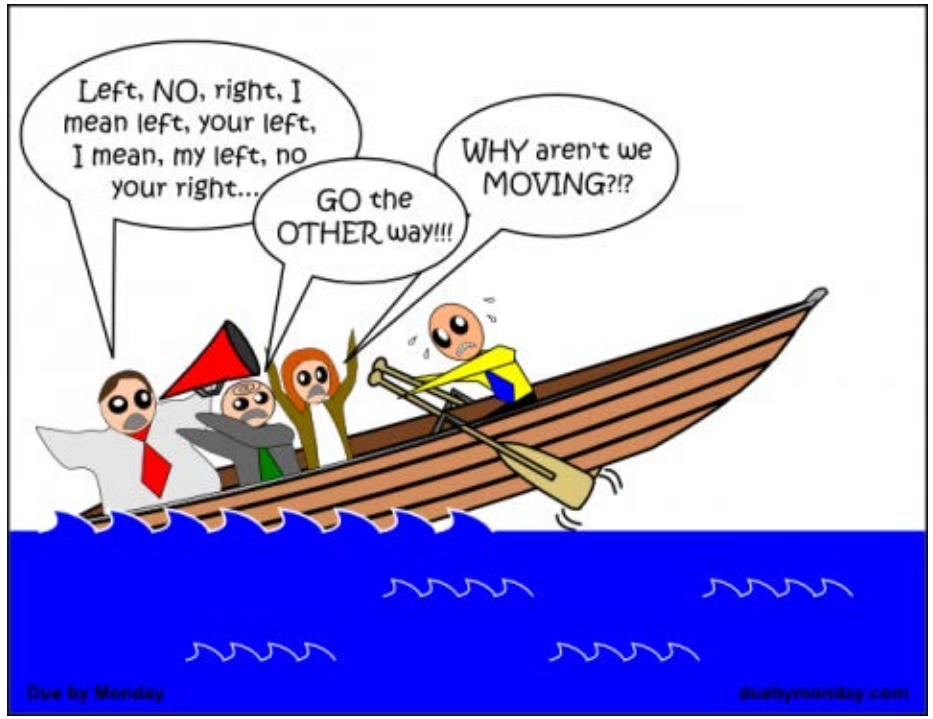
VERS TEAM



- Dr. Wen Chang, Project Lead
- Dr. Kathy Perales, Overall Process and NRRS
- Dick Kasul, VERS Modeling
- Meredith Bridgers, Surveys, Meters, and BMPs
- Ginny Dickerson, Webmaster – Data Integration
- Dena Williams, Coordinator Overall Process
- Michigan State University, NRRS
- Department of Transportation, Volpe Team – Meters and BMPs
- VERS Governance Board – Each BLM represented
- VERS CATT - Representatives from Each District

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QUESTIONS?

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