Navigation Data Resources

Inland Navigation Economic Webinar

6 March 2013

Huntington WV

Dick Ash
USACE Planning Center
of Expertise for Inland
Navigation (PCXIN)



US Army Corps of Engineers
BUILDING STRONG®



Navigation Data Systems

- Existing Data Collection Systems
 - Waterborne Commerce Statistics (WCS)
 - Lock Performance Monitoring System (LPMS)
- New Data Initiatives



Before filing out this fo for Privacy Act Stateme	orm, see reverse s ent and Instructio	ide ons				STATE		EL OPERATION REPO (ER 335-2-1) REIGHT AND PASSEN		RRIED					OMB	APPROVAL NO. 0710	0-0006
reviewing instructions the collection of infor	s, searching exi mation. Send o	sting data comments	sources, g regarding t	estimated to average 23 n athering and maintaining th his burden estimate or any partment of Defense, Washi	e data needed other aspect o	, and completed this collect	eting and revi ion of informa	Management completed f	nt and Bud orm to eith	get, Pape er of thos	rwork Reduct e addresses.	on Project (071 Send your com	0-0006 pleted	Suite 1204, Arlington, V 3). Washington D.C. 205 form to: Department of I lew Orleans, LA 70161	03. DO	NOT RETURN your	ce of
TRIP NO.	YEAR	SEL	TYPE OF VESSEL (Check one) SELF-PROPELLED, DRY CARGO AND PASSENGER OTHER SELF-PROPELLED-TANKER NON-SELF-PROPELLED, TANKER NON-SELF-PROPELLED, DRY CARGO NON-SELF-PROPELLED, DRY CARGO											NET REGISTER 1	TONS FLAG		
	LOADED AT -		- 8	DIS	CHARGED AT	4		UNLOADED CAR	GO DATA	(If light, s	o state)		П	HARBOR MAIN	TENANC	E FEE INFORMATIO	N
PORT OR LOCALIT	DOCK	DATE	ACTUAL DRAFT	PORT OR LOCALITY	DOCK	DATE	ACTUAL DRAFT	COMMODITY	QTY	UNIT ₁	WEIGHT PER UNIT	NET TONS (2000 pounds)	CONTRED	NAME OF SHIPPER		SHIPPER'S SSN OR IRS NO. ENTER 'SSN' OR YRS' NEXT TO NUMBER)	EX CODE
I HEREBY OPERATOR'S NAM		гнат ті		TIFICATION COMPLETE AND AN ADDRESS TELEPHON		TE REPO	RT	a. REFUGE	ELS (Whe	en more th		OF LOCALITIE	S ENT	temate channels used.) TERED FOR - PAIRS	(See insi	de cover.)	
FOOTNOTES: 1 Gro.	ss Tons, Bushe	ls, etc.		IELEPHON				NEMPINA									

WCS Record Example

VESSEL O R I G I N D E S T I N A T I O N COMM TONS

AEP123 BS6 BS Term 3/1 KA34 Amos 3/4 Coal 1523

AEP123 KA34 Amos 3/5 OH316 ACBL Dk 3/9 Empty 0



WCS Record Example

VESSEL ORIGIN DESTINATION COMM TONS

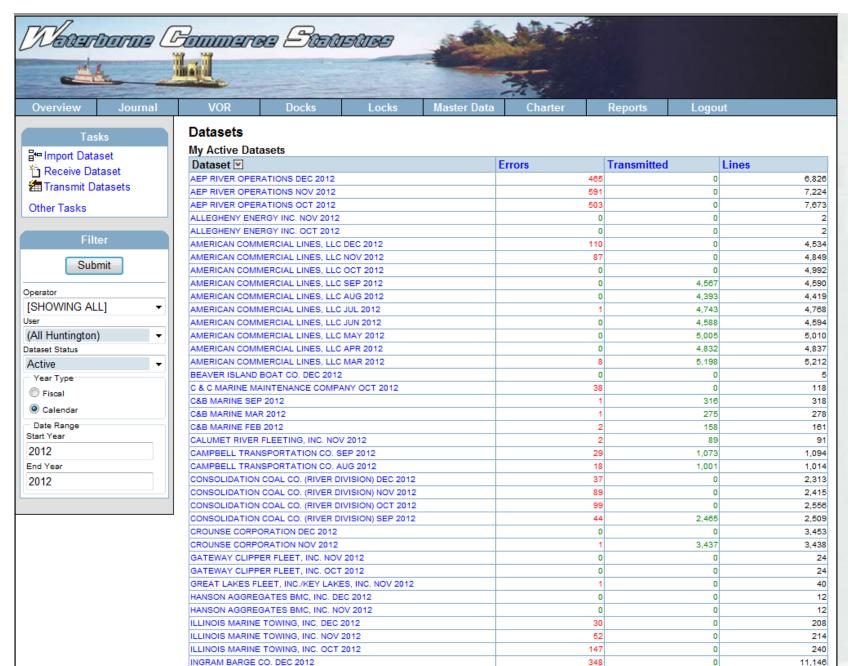
13579 42006101 42339202 32100

AEP123 BS6 BS Term 3/1 KA39 Amos 3/4 Coal 1523

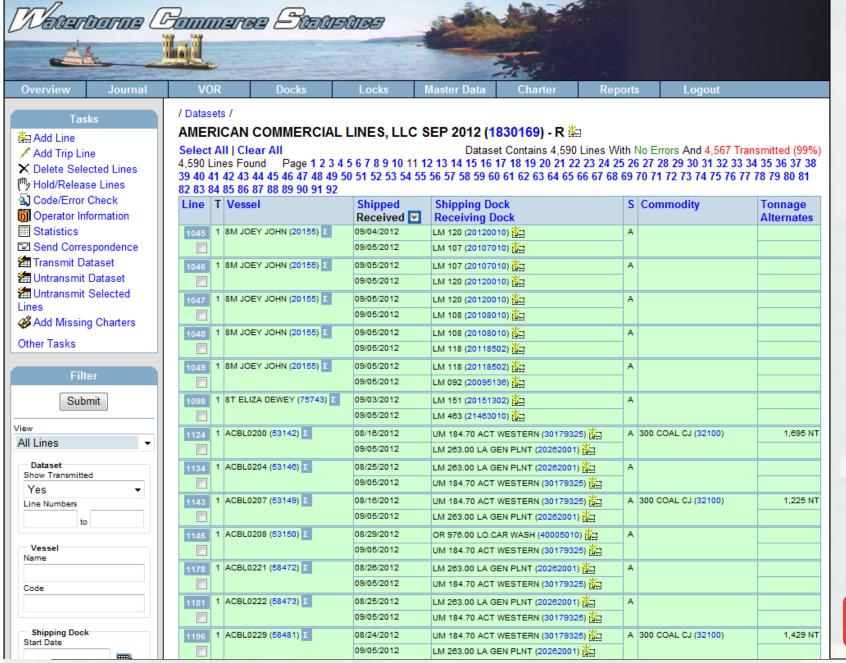
13579 42339202 42665202

AEP123 KA39 Amos 3/5 OH316 ACBL Dk 3/9 Empty 0

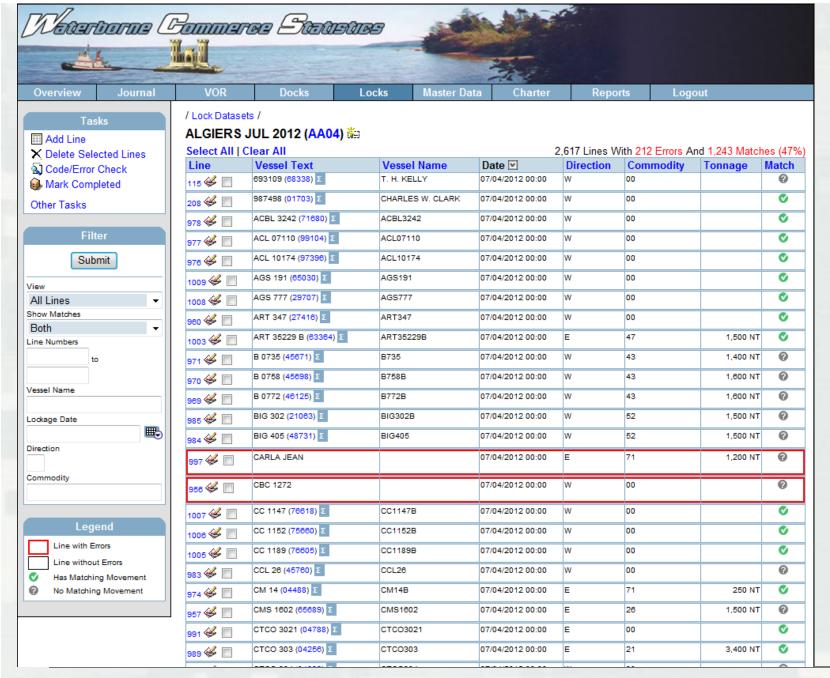




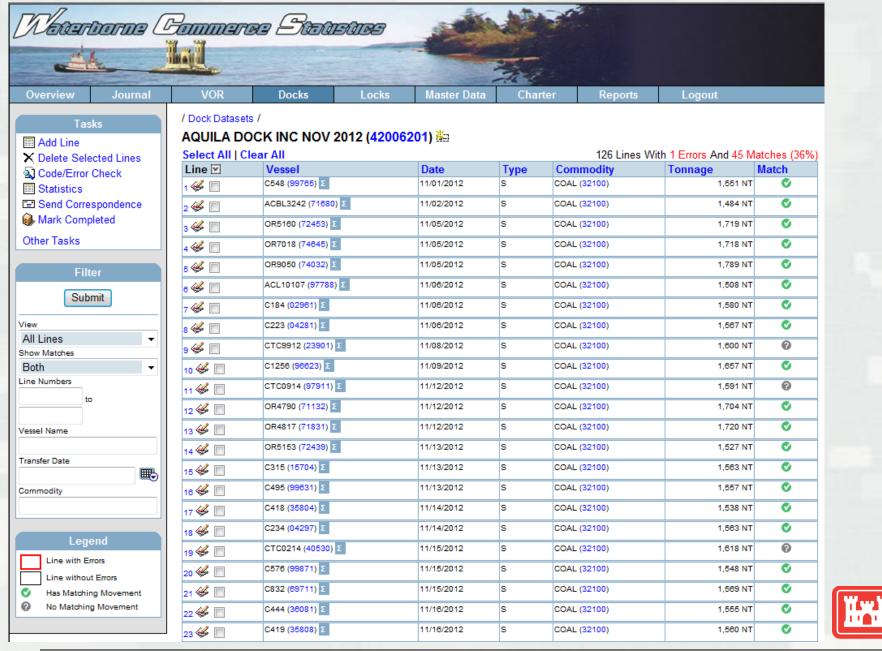


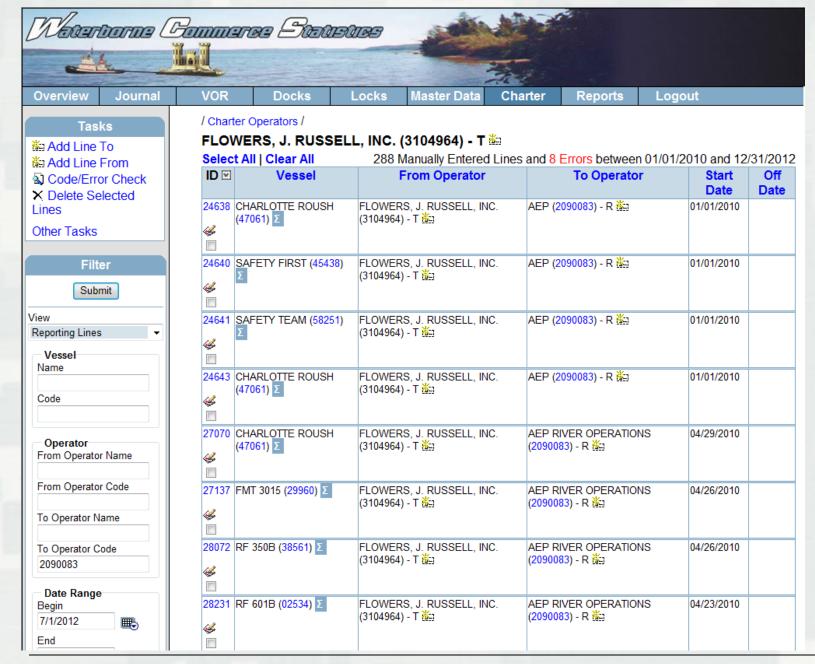












Lock Information

Location and physical characteristics of Corps Locks

Record for each lockage
Times –Arrival, Start/End Lockage
Commodity and Tonnage
Direction of Travel
Number & Type of Vessels
Flotilla Size and Number of Barges

Time and reason for lock stoppages

Data recorded by Lock Operator





Lock Data Uses

- Essential for Planning & Economic Studies
- Risk Assessment & Emergency Management
- Actual Waterway Traffic and Lock Status
- Assists in Maintenance Scheduling
- Performance Information
- Data Quality Check For WCSC
- Used to review and evaluate lock usage and manpower needs



LPMS/OMNI

- Previously two data entry protocols collecting the same baseline data, LPMS and OMNI have now been merged
- Hydrology information is now collected in LPMS for locks that previously used OMNI to do so.
- Data loaded weekly into the lock data warehouse
- National statistics come from the data warehouse



New LPMS Home

https://lpms.usace.army.mil



US Army Corps of Engineers Lock Performance Monitoring System

Program Manager: Ginny Pankow Phone: 703-428-9047 Fax: 703-428-6047 Email:

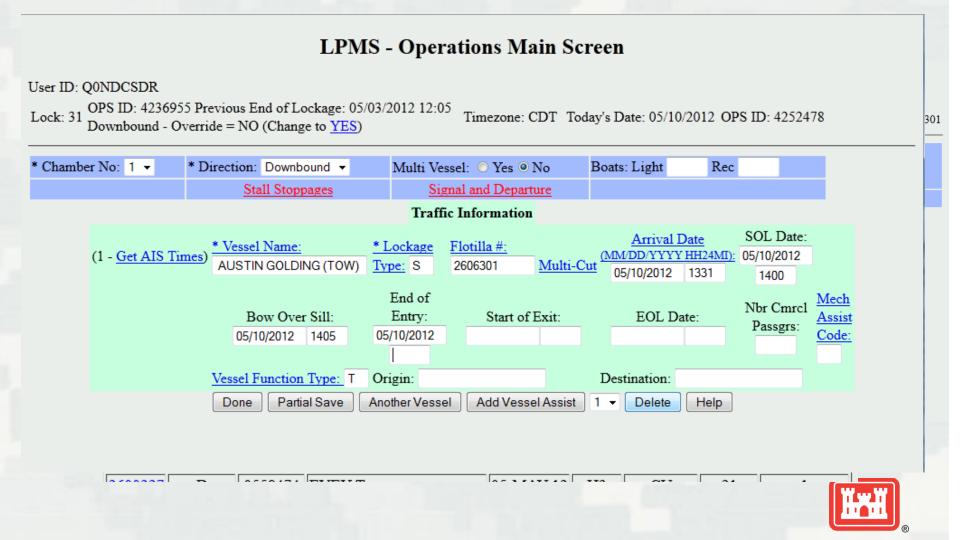
ceiwr-ndc.lpms@usace.army.mil

U.S. Army Corps of Engineers Navigation Data Center 7701 Telegraph Road Casey Building, #2594, Room 220A Alexandria, VA 22315-3868

Logout Admin **General Information** Lock Staff Refresh Messages Create Message Edit Message o Arrivals Screen o OA Reports o User's Guide Actions o News (UPDATED: 01 o Flotillas Screen o Delete Operation/Flotilla March 2013) o Operations Screen Message o Reports o Stall Stoppage Screen Message Subject Message Text Message Creator Create o Training Videos o Hydrology Details in the LPMS o Edit Screens (Ops, Flotillas, Barges) 2 OVERRIDE GLITCH **OONDCDEW** 2013/03/01 1 o POC List NEWS. o ACCB Members o Vessel Table Maintenance Please read the LPMS o ACCB Actions NEWS regarding when OONDCDEW 2013/03/01 1 1 VESSEL NAME CHANGE to change vessel o Message System Help



Entering Lockage Data



Stalls/Stoppages

all Stoppage								
lection Criteria								
elect a Stall Sto	ppage - EROC: S	elect an EROC	· •	River Code	: Select a Rive	r Code 🔻 Lock No: Selec	ta Lock No 🔻 Chamber No:	•
Ве	gin Stop Date:				Go			
all Stoppage Re	cord							
EROC:			River Code:			Lock No:	Chamber No:	•
egin Stop Date:			End Stop Date:					
Scheduled:	Yes No	Reason	n:			▼ Number	of Hardware Cycles:	
Comments:								
					//			
Add								

AIS Enhanced Information

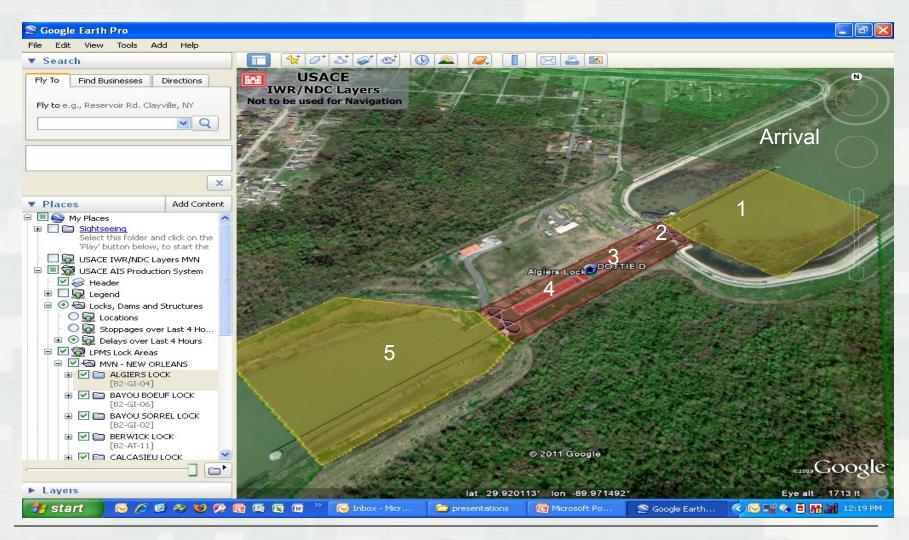
- Lock Operator
 - ▶ Situational Awareness
 - ► Increased Safety
 - ► Flexibility in planning maintenance
- Data Collection
 - Automatic Collection of lock timing events (MVN locks)
 - Receivers have been installed at additional districts (MVR, MVP and LRH)
 - Automatic collection is pending the next phase of LPMS development



Port Allen Lock Operator View



Real Time Data Collection



Getting Info to Industry http://corpslocks.usace.army.mil



US Army Corps of Engineers

Lock Performance Monitoring System

Welcome to Corps Locks!

The Corps Locks website contains lock and vessel specific information derived from the United States Army Corps of Engineers Lock Performance Monitoring System (LPMS). The information contained here represents a half-hourly updated snapshot of Freedom of Information Act (FOIA) data on U.S. flag vessels and foreign vessels operating in U.S. waterways that transited a Corps-owned or operated lock structure. Detailed information on specific companies or commodities is considered privileged and is not included in the Corps Locks website.

Find a Vessel

Lock Queue Report

Lock Status Report

Tonnage Report

Data Web Services

















FOIA Contact Us
Privacy and Security Information Quality

Getting Info to Industry - Facebook



Getting Info to Industry - Twitter





BUILDING STRONG_®

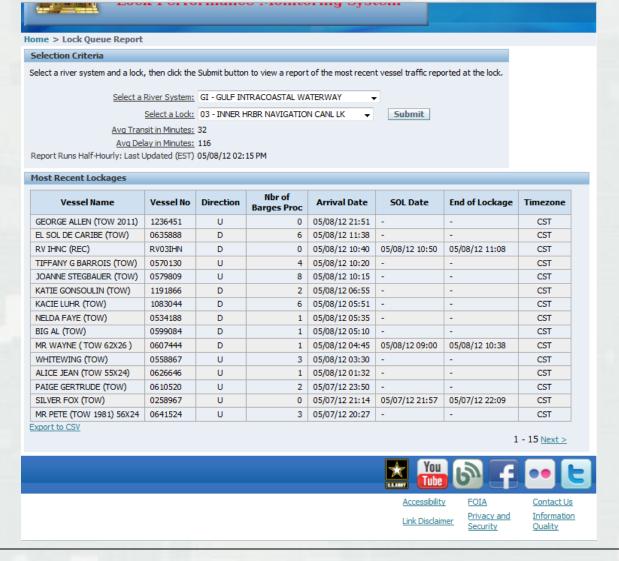
Getting Info to Industry – Web Services

```
Attp://corpslocks.usace.army.mil/lpwb/xml.traffi...
 <?xml version="1.0" ?>
 <ROWSET>
 - <ROW>
    <EROC>B2</EROC>
    <RIVER_CODE>GI</RIVER_CODE>
    <RIVER_NAME>GULF INTRACOASTAL WATERWAY</RIVER_NAME>
    <LOCK_NO>01</LOCK_NO>
    <LOCK_NAME>PORT ALLEN LOCK
    <DIRECTION>U</DIRECTION>
    <VESSEL_NO>0564973</VESSEL_NO>
    <VESSEL NAME>CAPT WHITEY (TOW) </VESSEL NAME>
    <ARRIVAL DATE>03/06/13 06:52
    <SOL_DATE>03/06/13 07:20</SOL_DATE>
    <END_OF_LOCKAGE>03/06/13 08:12</END_OF_LOCKAGE>
    <TIMEZONE>CST</TIMEZONE>
    <NUM BARGES>5</NUM BARGES>
    <HAZARD CODE>N</HAZARD CODE>
 < ROW >
    <EROC>B2</EROC>
    <RIVER CODE>GI</RIVER CODE>
    <RIVER NAME>GULF INTRACOASTAL WATERWAY</RIVER NAME>
    <LOCK NO>01</LOCK NO>
    <LOCK_NAME>PORT ALLEN LOCK
    <DIRECTION>D</DIRECTION>
    <VESSEL_NO>1204198</VESSEL_NO>
    <VESSEL_NAME>MATAGORDA ( TOW 72X30 )</VESSEL_NAME>
    <ARRIVAL_DATE>03/06/13 05:47</ARRIVAL_DATE>
    <SOL_DATE>03/06/13 06:24</SOL_DATE>
    <END_OF_LOCKAGE>03/06/13 07:08</END_OF_LOCKAGE>
    <TIMEZONE>CST</TIMEZONE>
    <NUM BARGES>2</NUM BARGES>
    <HAZARD_CODE>N</HAZARD_CODE>
   </ROW>
 - <ROW>
    <EROC>B2</EROC>
    <RIVER_CODE>GI</RIVER_CODE>
    <RIVER_NAME>GULF INTRACOASTAL WATERWAY
    <LOCK NO>01</LOCK NO>
    <LOCK_NAME>PORT ALLEN LOCK
    <DIRECTION>U</DIRECTION>
    <VESSEL NO>1174266</VESSEL NO>
```

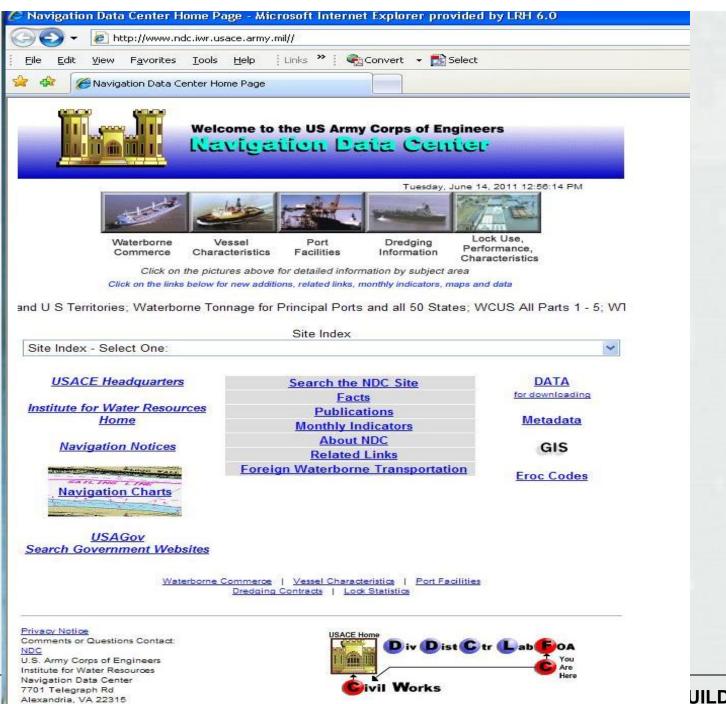


<VESSEL NAME>EMS EXPRESS (TOW)</vessel NAME>

Getting Info to Industry –Reports









JILDING STRONG®

New Data Initiatives

- Federal Industry Logistics Standardization (FILS)
- Master Docks Plus
- Federal Initiative for Navigation Data Enhancement (FINDE)
- River Information System (RIS)



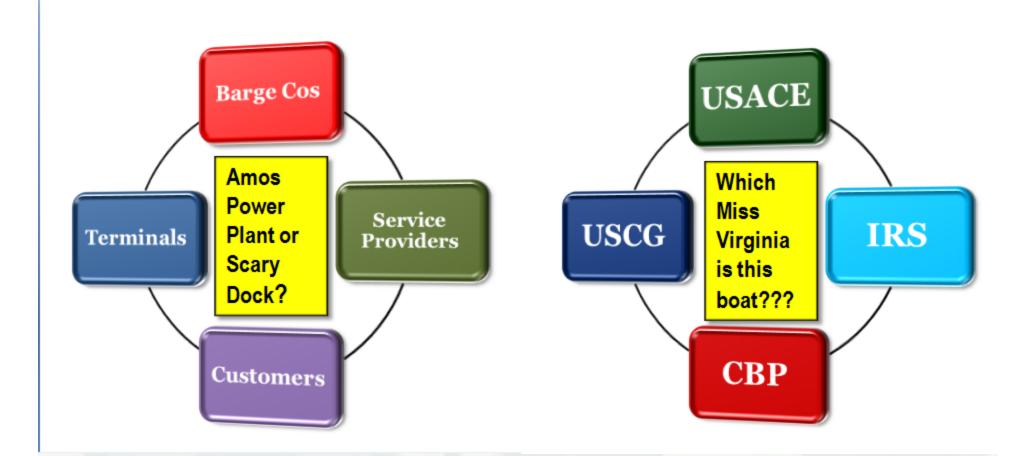
FILS - Background

The Challenge

- Industry and Government discovered that they have the same issue with regards to:
 - U.S. Navigation Points of Interest Locations, Mile Points, Rivers
 - Vessels Boats & Barges
 - o Commodities Freight
- No one organization or agency uses a standard name, identifier or term
- ▶ This leads to confusion, errors and wasted time & money



FILS - Background





FILS - Background

The Challenge

Industry and Government had embarked on <u>separate</u> efforts to improve the accuracy, timeliness and completeness of the navigation information shared <u>electronically</u> within their respective communities.



FILS - Yesterday

Guiding Principles

- Accepted by Industry
- Accepted by Federal Agencies
- Usable in multiple transmission formats
- Adhere to international standards
- The work product of FILS should provide the foundation which makes it possible for the individual communities inside and outside of our industry to share information in a method and format that is Common, Non-proprietary and an Open Standard

FILS - Today

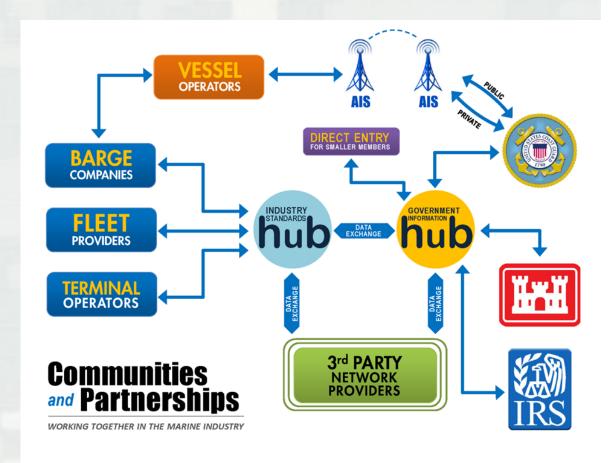
- Locations Over 40,000 Navigation Points of Interest catalogued with unique IDs
- Bridges, locks and chambers have been catalogued
- Vessels Over 52,000 vessels catalogued with unique IDs
- Location & vessel standard information is available to all
- FILS standard data is recognizable by USACE, USCG, IRS, CBP & Industry (when trading electronically).
- Industry traded over 1.2M standard electronic messages in 2012.
 (Orders, Order Responses, Invoices, Boat Status, Barge Status, Tow Diagrams, Acknowledgements)



FILS - Tomorrow

Built on what is in place today

- Consistent and accurate information regardless of communication method
- Common standard for information
- Open standard of messaging
- Non-proprietary

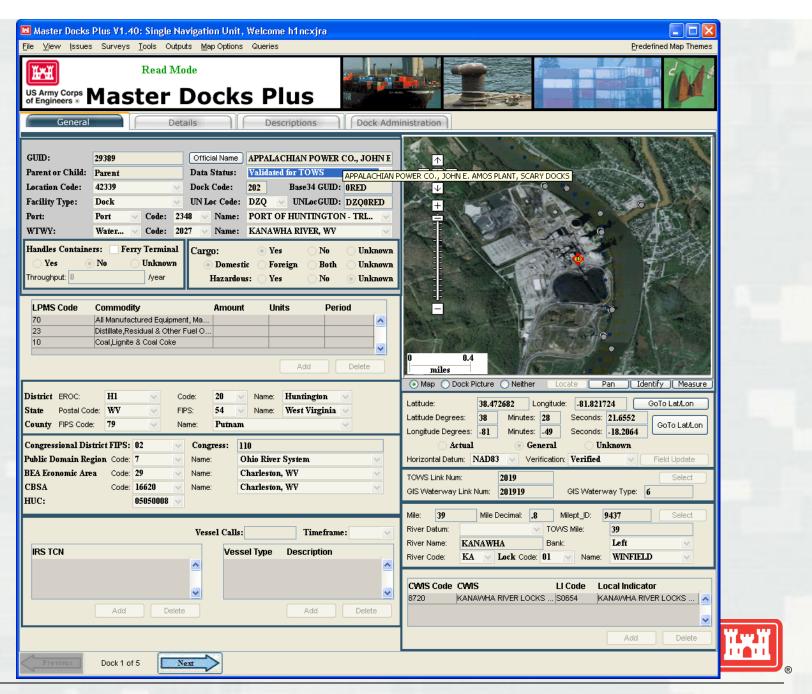


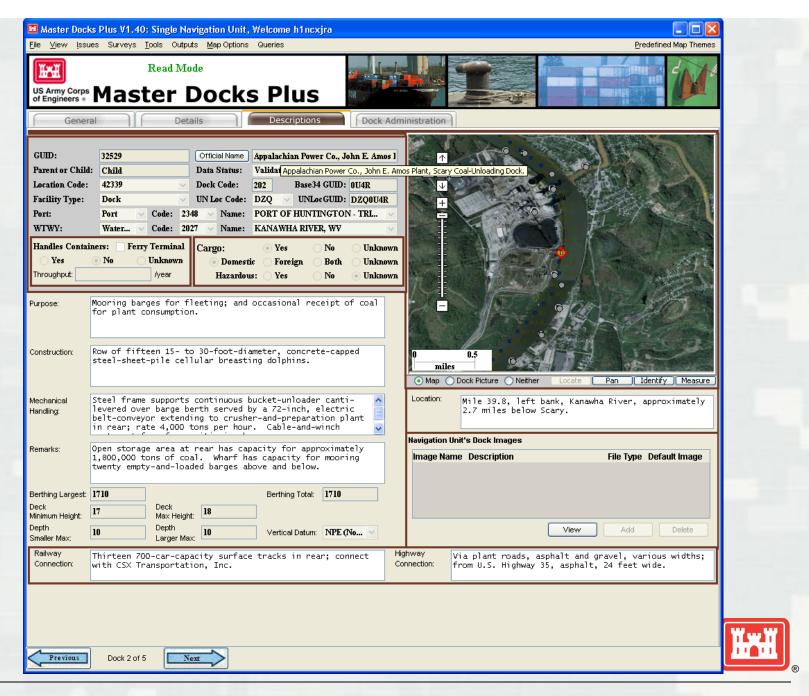


Master Docks Plus

- Merge 2 Corps Dock Databases
 - Port Series
 - WCSC Master Docks
- Develop Process for Update and Maintenance
 - No more facility visits
 - Email/phone surveys
 - Electronic input from industry



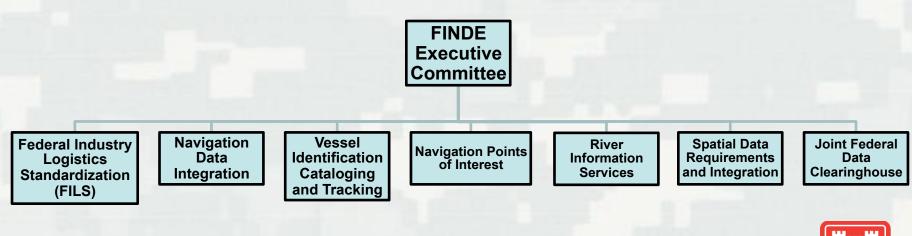




Federal Initiative for Navigation Data Enhancement (FINDE)

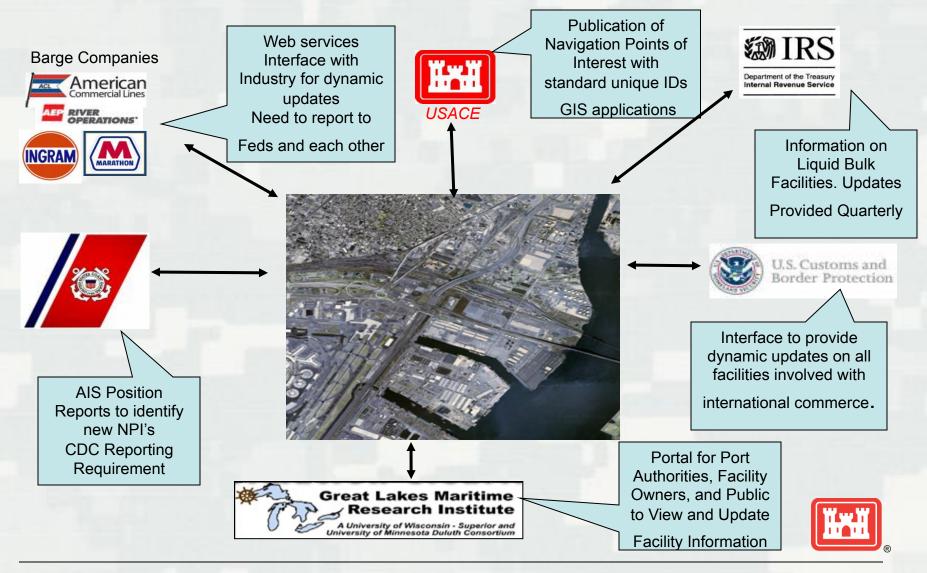
FINDE is an effort to provide an integrated set of complete, precise, and reliable navigation data for managing our Nation's waterways making successful capital investment decisions.

- Partners: USCG, IRS, Customs and Border Protection (CBP) and USACE
- Purpose: To develop a federally integrated navigation data set.





FINDE – Agency Roles



FINDE Task Teams

- Navigation Data Integration
 - Leverage navigation information and services to create a federally integrated common picture
 - ▶ Leverage AIS information across the Federal Government
 - Information for project management, capital investment, forecasting, and modeling
 - Identify carriers of taxable product
- Vessel Identification, Cataloging, and Tracking
 - ▶ Harmonize and validate vessel information from a Federal perspective
 - ► Establish a common and central source for vessel information
 - Managed by the Coast Guard
 - Standard Vessel ID (Official Number)
- Navigation Points of Interest
 - ▶ Leverage the Corps' inventory of navigation points of interest
 - ► Increase intelligence for safety and inspection
- FILS Coordination
 - ▶ Ensure standard vessel, location, and commodity codes are used in data integration



Integrating the IRS Terminal Database

IRS_TCN_ID - NAV_UNIT_ID	▼ ALIAS_NAME	→ CITY_OR_TOV	VN - ZIPCODE	→ STATE →	LATITUDE -	LONGITUDE -
2243405 0Q1D	INTERNATIONAL MATEX, ST. ROSE TERMINALS	St Rose		LA	29.93806	-90.32583
2243219 0Q1G	INTERNATIONAL-MATEX TANK TERMINALS LTD GRETNA DOCKS	Harvey, LA	70058	LA	29.91667	-90.07111
2243527 0Q1V	CHALMETTE REFINING LLC	Chalmette	70043	LA	29.92806	-89.97167
2243404 0Q27	PHILLIPS 66 CO., ALLIANCE REFINERY	Belle Chasse	70037	LA	29.68	-89.96694
2243482 0Q2M	CITGO PETROLEUM CORP REFINERY WHARVES	Westlake	70669	LA	30.17917	-93.31722
2243395 0Q3S	HESS CORP., MONEY POINT WHARVES	Chesapeake	23324	VA	36.78472	-76.30278
2243479 0Q3S	HESS CORP., MONEY POINT WHARVES	Chesapeake	23324	VA	36.78472	-76.30278
2243392 0Q3X	PETROLEUM FUEL & TERMINAL CO BALTIMORE DOCKS	Baltimore	21224	MD	39.27306	-76.57222
2243521 0Q3X	PETROLEUM FUEL & TERMINAL CO BALTIMORE DOCKS	Baltimore	21224	MD	39.27306	-76.57222
2243332 0Q42	CHEVRON PRODUCTS CO, PASCAGOULA REFINERY	Pascagoula	39581-3201	MS	30.34278	-88.5075
2243439 0Q54	WESTERN REFINING, YORKTOWN REFINERY WHARVES	Yorktown		VA	37.22528	-76.43889
2243453 0Q5S	VOPAK TERMINAL WILMINGTON	Wilmington	28401	NC	34.21111	-77.95583
2243454 0Q5Y	COMMODORE'S POINT TERMINAL WHARF	Jacksonville	32226	FL	30.322775	-81.628745
2243320 0Q61	AMERADA HESS CORP PENNSAUKEN DOCKS 1 - 6	Pennsauken	8110	PA	39.9775	-75.06778
2243477 0Q6C	PREMCOR INC., DELAWARE CITY, DE.	Delaware City	19706	DE	39.58528	-75.5925
2243470 0Q6E	SUN REFINING AND MARKETING MARCUS HOOK WHARF	Marcus Hook	19061	PA	39.811863	-75.414112
2243381 0Q6T	VALERO TERMINAL	Paulsboro	8666	NJ	39.84611	-75.26528
2243201 0Q6W	SUNOCO INC.	Philadelphia		PA	39.87861	-75.15639
2212252 2221	0.000.000.000	al i	40077	***		70 70070



Reconciling USACE & USCG Vessel Inventories

3 O.N. 4 O.N.	A REMARKS # IN CG_NUMBER TYPO (1-DIGIT)	B VESSEL 52068	C NRT	D	E	F	G	Н	1	1	ν	1	B.A.
3 O.N. 4 O.N.	# IN CG_NUMBER		NRT					- 11		J	V	L	IVI
3 O.N. 4 O.N.	_	52068		VESS_NAME	VESS_NUMBER	VESSEL_NAME	CG_NUMBER	OFFICIAL_NUM	OPERATOR	OWNER	LAST_OPER	TS_OPERATOR	REG_LENGTH O
4 O.N.	TYPO (1-DIGIT)		11618	SEA-LAND DEFENDER	0	MSC DAMLA	7820966	604246		1100000	1315724	1101989	806.6
		62038	130	PACIFIC EMPIRE	0	PACIFIC STAR	566510	556510	3800000		0	3803043	175
5 O.N.	TYPO (1-DIGIT)	60464	192	MARSEA FIVE	0	JAGUAR	629251	629259	900000		70354	902187	166
	TYPO (TRANSPOSE 2 DIGITS)	68327	120	MR. CLEAN II	0	CLEAN ISLANDS	645590	645950	4100000		0	4103041	125
6 O.N.	TYPO (1-DIGIT)	59965	63	PBR	163	CAPITOL VENTURE	643737	643732	1500000			1502748	98.9
7 O.N.	TYPO (TRANSPOSE 2 DIGITS)	72220	62	LOUISE G	0	C-CONDO	658394	568394	3201168	3201168	1601092	3205338	90.6
8 O.N.	TYPO (1-DIGIT)	62846	67	THUNDERPLANET	0	KAMERON RENEE	645835	645836		3200000		3205118	110
9 O.N.	TYPO (1-DIGIT)	55030	66	BALTIMORE PATRIOT II	0	MISS CHRISTIN	281867	281864	967113		967113	952503	64.5
10 O.N.	TYPO (1-DIGIT)	52511	17	REGGIE B	0	BARON	228368	288368	700000				471
11 O.N.	TYPO (1-DIGIT)	3556	64	MOBY JIM	0	CAPT JOHNNY	299619	299649		1500000		1504556	59.5
12 O.N.	TYPO (1-DIGIT)	15460	36	BAYOU LADY	0	CAPT SUARD	587358	507358	3201024	3200000	3201024	3205538	48
13 O.N.	TYPO (1-DIGIT)	6321	134	DELTA DEANNA	0	EAGLE	929238	928238		1500000		3901848	92
14 O.N.	TYPO (TRANSPOSE 2 DIGITS)	42641	70	MISS MARCIA	0	EVA BISSO	594301	594031	3200957	3200000	3200957	3202057	64.5
15 O.N.	CORRECTED; NAME CHANGE ONLY	71446	73	TONY	0	RICKY J LEBOEUF	289759	289759	3300000				0
16 O.N.	TYPO (1-DIGIT)	1534	35	KATANNI	0	ROCHELLE KAYE	290988	290983	2300366		2300366	2301038	51.5
17 O.N.	ERROR (SHIFT DIGITS)	62948	50	MR. ALEX	0	MS D	283125	628312		3200000		3200805	47.2
18 O.N.	ERROR (WRONG SHIP O.N., CONFUSED BY NAME)	34167		SEA HUNTER	0	ROOKIE	692635	692625		100000		100090	65
19 O.N.	CROSSED WITH OTHER SHIP	62138	6588	SANTA ADELA	0	SANTA ADELA	502726	504015	300000		0	301698	521.2
20 O.N.	CROSSED WITH OTHER SHIP	62139	6588	SANTA JUANA	0	SANTA JUANA	504015	502726	300000		0	301698	521.2
21 O.N.	CROSSED WITH OTHER SHIP	34338	55	CAPT. JIM	0	CAPT. JIM	586018	581773		3200000	3201397	3205847	
22 O.N.	CROSSED WITH OTHER SHIP	61484	55	CAPT. KEITH	0	CAPT. KEITH	581773	586018		3200000	3201397	3205847	
23 O.N.	TYPO (1-DIGIT)	54682	445	ATLANTIC BEACH	0	ATLANTIC BEACH	552679	562679		3300000		3301113	176.2
24 O.N.	TYPO (1-DIGIT)	66889	615	ATLANTIC SHORE	0	ATLANTIC SHORE	555062	552062	1264027				0
25 O.N.	TYPO (1-DIGIT)	9578	12	PRIORITY TOO	0	PRIORITY TOO	589511	589551		100000		106893	35.1



River Information Services

Waterway (Voyage Planning)
Vessel Traffic (Voyage Management)
Transportation Logistics
Support Services
Strategic Traffic
Miscellaneous

River Information Services (RIS) is the exchange of information, in advance and real-time, needed to make inland waterway transport safe, secure and reliable.



River Information Services

Aids To Navigation (ATON)

Lock Closures

Lock Characteristics

Lock Queue Data

Lock Status

Inland Electronic Nav Charts

Safety Zones

Dredging Contracts

Water Level

Weather Forecasts

Notices to Navigation/Mariners

Vessel Location

Historical Data

Real Time Current Velocities

Current Ice Conditions

Master Docks +

Commodities

Vessel Characteristics

Federal Agency Jurisdictions

Federal Reporting Requirements

Regulations

Interactive Portal

Mariner Licensing

Vessel Documentation

Historic Data



River Information Services

Aids To Navigation (ATON)

Lock Closures

Lock Characteristics

Lock Queue Data

Lock Status

Inland Electronic Nav Charts

Safety Zones

Dredging Contra

Water Level

Weather For casts

Notices to Navigation/Mariners

Vessel Location

Historical Data

Real Time Current Velocities

Current Ico Conditions

Maste Docks

Connocities

V sel Characteristics

Sederal Agency Jurisdictions

Federal Reporting Requirements

Regulations

Interactive Portal

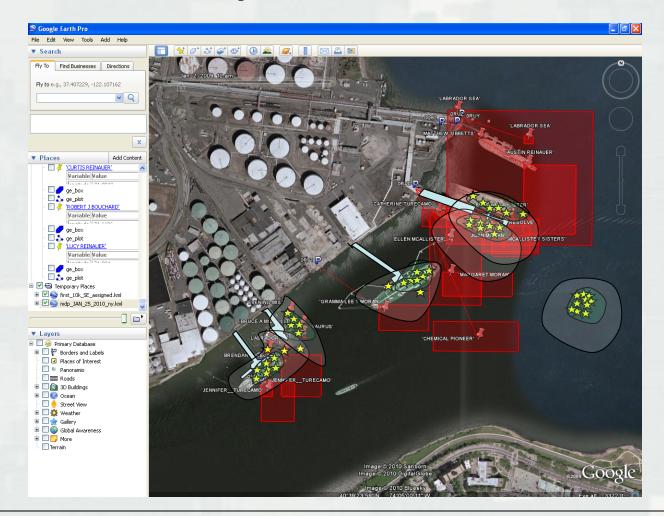
Mariner Licensing

Vessel Documentation

Historic Data

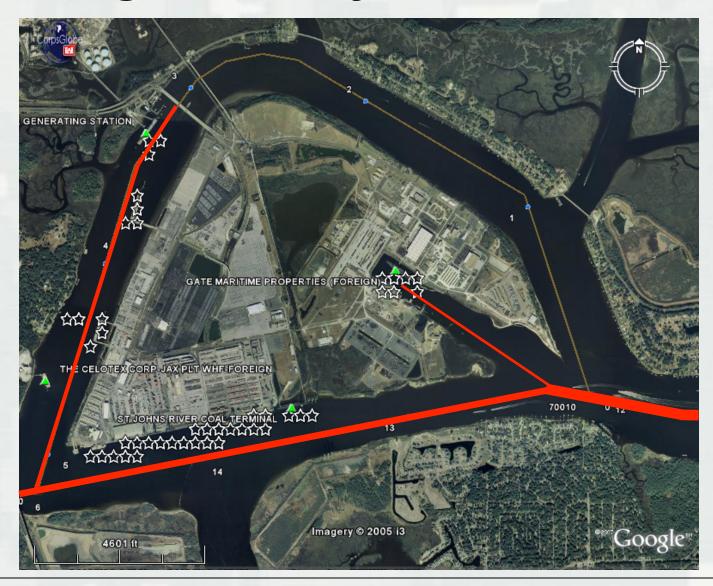


Fusing AIS and Other Data Sources for Better Quality & Information





Validating Waterway Links and Link Use





Identifying & Cataloging Navigation Points of Interest



Cross-Checking and Correcting Data



