WIMS TechNote-2010-02

Fire and Aviation Management Staff

Date: **November 20, 2010**

System: **WIMS**

Subject: **WXML – Web Services**

Purpose: **Document New WIMS Web Services**

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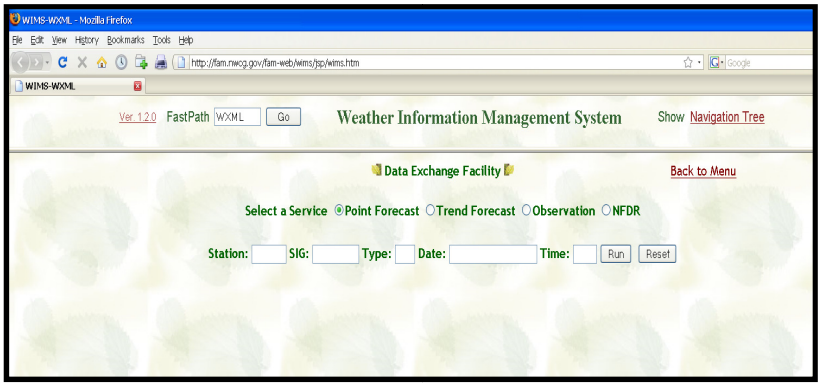
Scope: **WIMS Web Services**

WXML - WIMS Web Services Availability

In 2009, WIMS began providing Web Services from within the WIMS application or from a browser. This service returns XML documents that can be used in subsequent applications.

Creating XML from within WIMS

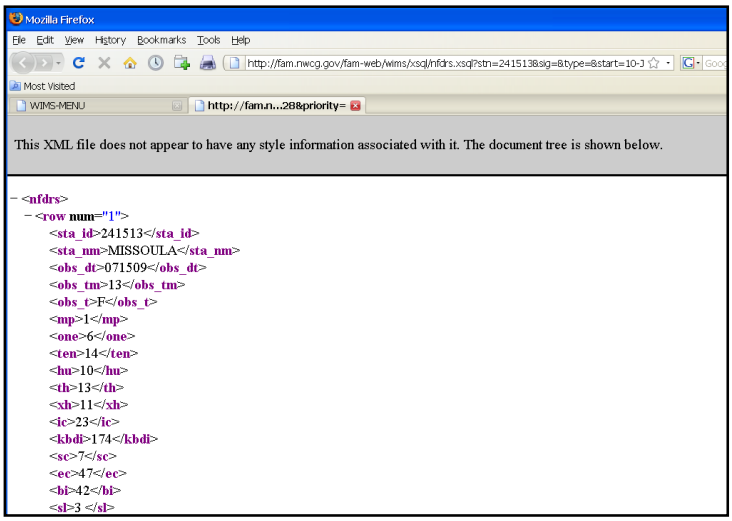
Enter WXML into the Fast Path; the Data Exchange Facility screen will appear.



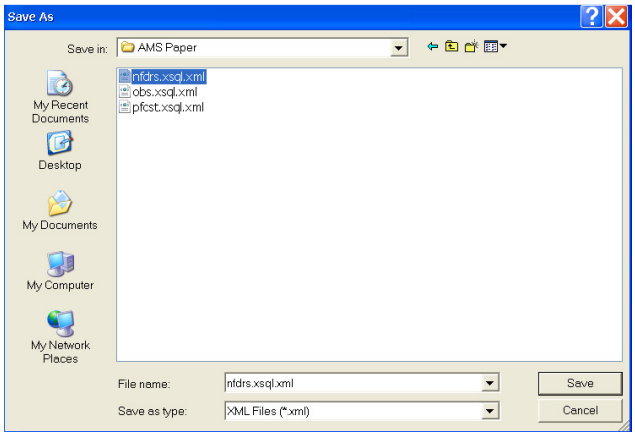
- Select Point Forecast, Trend Forecast, Observation or NFDR using radio buttons
- Enter either Station or SIG
- Enter the Type of the data (O or R for Observations; O, R, N, or F for NFDRS.) If blank all record types are retrieved.
- Enter the Date Range (dd-mon-yy dd-mon-yy)

- Enter the Time (0 – 23 optional)
- Click on Run

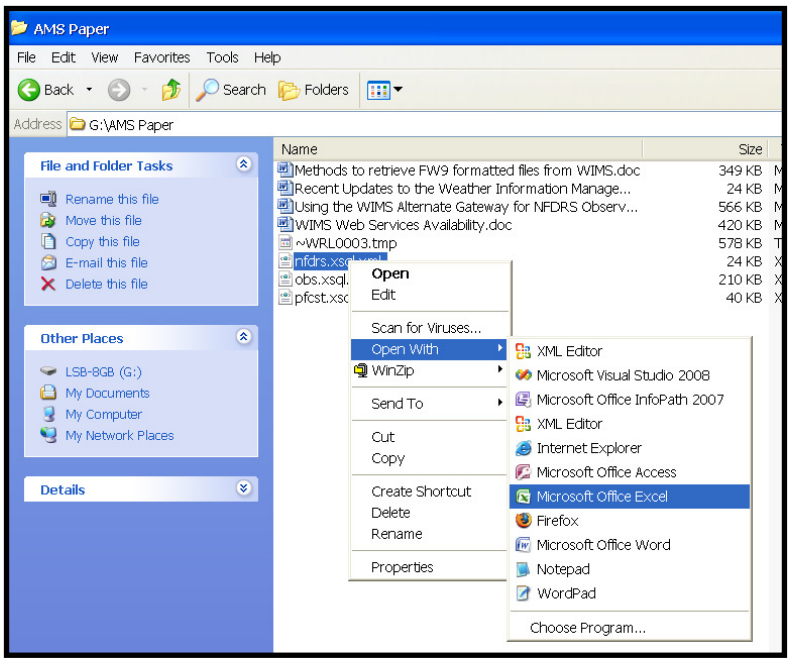
Another browser window will open and return data acquired in XML format.

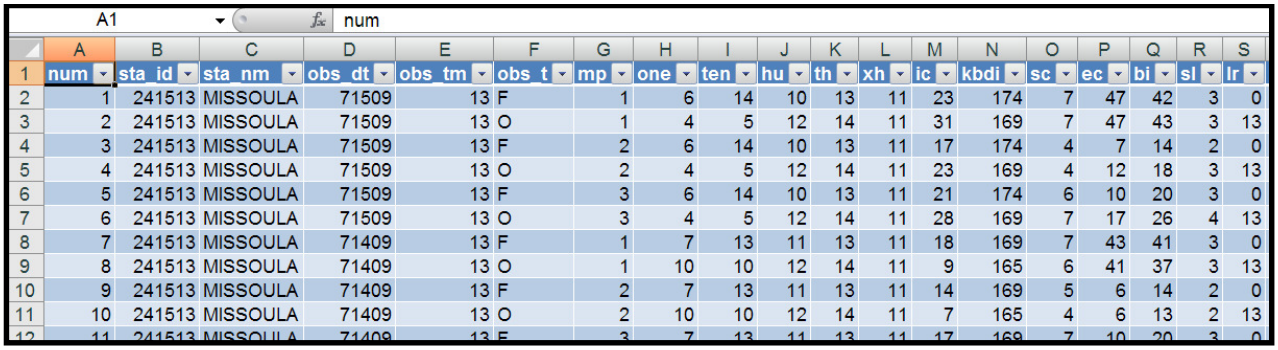


The data can be saved using the browser's **Save** or **Save As** function.



The saved file can be opened in programs that recognize the XML encoding, for example, Excel.





A1 num

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	num	sta_id	sta_nm	obs_dt	obs_tm	obs_t	mp	one	ten	hu	th	xh	ic	kbdi	sc	ec	bi	sl	lr
2	1	241513	MISSOULA	71509	13	F	1	6	14	10	13	11	23	174	7	47	42	3	0
3	2	241513	MISSOULA	71509	13	O	1	4	5	12	14	11	31	169	7	47	43	3	13
4	3	241513	MISSOULA	71509	13	F	2	6	14	10	13	11	17	174	4	7	14	2	0
5	4	241513	MISSOULA	71509	13	O	2	4	5	12	14	11	23	169	4	12	18	3	13
6	5	241513	MISSOULA	71509	13	F	3	6	14	10	13	11	21	174	6	10	20	3	0
7	6	241513	MISSOULA	71509	13	O	3	4	5	12	14	11	28	169	7	17	26	4	13
8	7	241513	MISSOULA	71409	13	F	1	7	13	11	13	11	18	169	7	43	41	3	0
9	8	241513	MISSOULA	71409	13	O	1	10	10	12	14	11	9	165	6	41	37	3	13
10	9	241513	MISSOULA	71409	13	F	2	7	13	11	13	11	14	169	5	6	14	2	0
11	10	241513	MISSOULA	71409	13	O	2	10	10	12	14	11	7	165	4	6	13	2	13
12	11	241513	MISSOULA	71409	13	F	3	7	13	11	13	11	17	169	7	10	20	3	0

Calling the Web Services directly

Users can construct a URL String to directly call the web services without being logged onto WIMS The basic URL's are listed below by function. Each URL's requires a character string of arguments.

For Point Weather Forecasts

http://fam.nwcg.gov/fam-web/wims/xsql/pfcst.xsql?<argument list>

For Zone (SIG) Trend Forecasts

http://fam.nwcg.gov/fam-web/wims/xsql/tfcst.xsql?<argument list>

For Weather Observations

http://fam.nwcg.gov/fam-web/wims/xsql/obs.xsql?<argument list>

For NFDRS

http://fam.nwcg.gov/fam-web/wims/xsql/nfdrs.xsql?<argument list>

<argument list> stn=&sig=&user=&type=&start=&end=&time

Required Fields:

Stations. Data for a single station or a list of stations (SIG) may be requested. If a SIG is specified, the WIMS ID of the owner of the SIG must also be specified.

Examples. **stn=241513&sig=** requests one station.

stn=&sig=FL-PORTL&user=FS7328 requests all stations in SIG FL-PORTL owned by FS7328.

Dates. The arguments ***&start*** and ***&end*** define the date ranges and are formatted dd-mon-yy. At least &start or &end is required. If both are specified, data are returned between the two dates (inclusive). If only a start date is specified, data from the start date to current date are returned. If only an end date is specified, all data prior to the end date are returned.

Examples: **&start=01-Jan-10&end=31-Dec-10** requests data for all of 2010.

&start=01-Jan-10&end= requests data from 01-Jan-09 to the current date.

&start=&end=15-Sep-08 requests data from 15-Sep-08 to the earliest record.

Times: The ***&time*** argument defines the hour to be returned. This is most useful for Observations. The hour is WIMS observation time (Local time 0 to 23).

Note: For display, WIMS truncates the hour. Thus any observations between 1400 and 1459 become hour=14.

Types: The ***&type*** argument defines the observation types returned. Valid arguments for &type depends on the data request:

For Weather Observations.

&type=O returns the once-daily NFDRS published weather observation

&type=R returns the hourly observations, exclusive of the "O" for the day

&type= returns all observations

For NFDRS.

&type=O returns the once-daily NFDRS Indexes from the published O observation

&type=R returns the once-daily NFDRS Indexes from the unpublished R observation

&type=N returns the four times/day NFDRS Indexes from the Nelson DFM implementation

&type=F returns the once-daily next day forecasted NFDRS Indexes

&type= returns all NFDRS record types

Example syntax for NFDRS (Browser and Wget).

- One station, all types for September of 2010

  http://fam.nwcg.gov/fam-web/wims/xsql/nfdrs.xsql?stn=241513&sig=&user=&type=&start=01-Sep-10&end=30-Sep-10&time=&user=

  wget --output-document=241513_NFDR.xml "http://fam.nwcg.gov/fam-web/wims/xsql/nfdrs.xsql?stn=241513&sig=&user=&type=&start=01-Sep-10&end=30-Sep-10&time=&user="

- All stations in a SIG, Observed NFDR only for 17-Sep-10

  http://fam.nwcg.gov/fam-web/wims/xsql/nfdrs.xsql?stn=&sig=MSLA&user=FS7328&type=O&start=17-Sep-10&end=17-Sep-10&time=

  wget --output-document=MSLA_NFDR.xml "http://fam.nwcg.gov/fam-web/wims/xsql/nfdrs.xsql?stn=&sig=MSLA&user=FS7328&type=O&start=17-Sep-09&end=17-Sep-09&time="

Example syntax for Observations (Browser and Wget).

- One station, hourly observations for 21-Sep-10 to the date of the query

  http://fam.nwcg.gov/fam-web/wims/xsql/obs.xsql?stn= 241513&sig=&user=&type=&start=21-Sep-10&time=&user=

  wget --output-document=MSLA_Hourly_WX.xml "http://fam.nwcg.gov/fam-web/wims/xsql/obs.xsql?stn= 241513&sig=&user=&type=&start=21-Sep-10&time=&user="

- All stations in a SIG, 0800 local time for 17-Sep-09

  http://fam.nwcg.gov/fam-web/wims/xsql/obs.xsql?stn=&sig=MSLA&user=FS7328&type=&start=17-Sep-10&end=17-Sep-10&time=8

  wget --output-document=MSLA_0800.xml "http://fam.nwcg.gov/fam-web/wims/xsql/obs.xsql?stn=&sig=MSLA&user=FS7328&type=&start=17-Sep-10&end=17-Sep-10&time=8"

WIMS WXML Data Definitions

NFDRS		Observations		Forecasts	
XML Tag	**Description**	**XML Tag**	**Description**	**XML Tag**	**Description**
Sta_id	WIMS ID	Sta_id	WIMS ID	Station_id	WIMS ID
Sta_nm	Station Name	Sta_name	Station Name	Station_name	Station Name
nfdr_dt	NFDR Date	Obs_dt	Obs Date	Fcst_date	Fcst Valid Date
nfdr_tm	NFDR Hour	Obs_tm	Obs Hour	valid_tm	Fcst Valid Hour
nfdr_type	NFDR Type	Obs_type	Obs Type	sow	State of Weather
Mp	Model Priority	Dry_temp	Dry Bulb Temp	Dry_temp	Dry Bulb Temp
Msgc	Fuel Model	Rh	Relative Humidity	Rh	Relative Humidity
One_hr	1-hr TLFM	M_l	Morning Lightning Activity Level (LAL)	a_l	Fcst AM LAL
Ten_hr	10-hr TLFM	Hc_rsk	Human Cause Risk	Wind_dir	Wind Direction
Hu_hr	100-hr TLFM	Wind_dir	Wind Direction	Wind_spd	Wind Speed
Th_hr	1000-hr TLFM	Wind_spd	Wind Speed	Ten_hr	Fcst 10-hr TLFM
Xh	X1000	temp_max	24 Hr Max Temp	temp_max	24 Hr Max Temp
Ic	Ignition Component	temp_min	24 Hr Min Temp	temp_min	24 Hr Min Temp
Kbdi	Keetch Byram Drought Index	rh_max	24 Hr Max RH	rh_max	24 Hr Max RH
Sc	Spread Component	rh_man	24 Hr Min RH	rh_man	24 Hr Min RH
Er	Energy Release Component	Pp_dur	24 Hr Precip Duration	Dur1	Hour of rain, 1st 16 hrs
Bi	Burning Index	Pp_Amt	24 Hr Precip Amount	Dur2	Hour of rain, 2nd 8 hrs
Sl	Staffing Level	Y_l	Yesterdays LAL	t_l	Total LAL for day
Lr	Lightning Risk	wet	Wet Flag	wet	Wet Flag
Lo	Lightning Occur. Index	sow	State of weather		
Hr	Human Risk				
Ho	Human Occur. Index				
Fl	Fire Load Index				
Hrb	Herbaceous Fuel Moist.				
Wdy	Woody Fuel Moist.				
adj	Adjective Rating				