Updated January 7, 2016

Instructions for Submitting ONROAD Inputs for the 2014 NEI

The U.S. Environmental Protection Agency (EPA)'s Air Emissions Reporting Rule (http://www.epa.gov/air-emissions-inventories/air-emissions-reporting-requirements-aerr) requires state and local agencies who submit to the National Emissions Inventory (NEI) to submit model inputs for mobile sources, rather than emissions. Emissions estimates may be submitted in addition, and emissions estimates will still be accepted from tribes without inputs. For the 2014 NEI, EPA plans to use the most current version of the Motor Vehicle Emission Simulator (MOVES) model to estimate both onroad and nonroad emissions. Because the MOVES version that runs nonroad is not expected to be available, or widely used, in time for most agencies to be familiar with its use for nonroad, we will be accepting National Mobile Inventory Model (NMIM) National County Database (NCD) inputs for nonroad and will be converting them for use in MOVES for the 2014 NEI estimation. Agencies that want to submit MOVES nonroad inputs may do so. For information on submitting NONROAD inputs as NCDs or CDBs, see the companion document "Instructions for Submitting NONROAD Inputs to the 2014 NEI." If you do not submit onroad or nonroad input data, EPA will generate emission estimates using EPA county specific estimates that may be based on national defaults. This document addresses submitting onroad MOVES CDB inputs only.

Since the MOVES inputs are county-based, tribal agencies should run MOVES and submit emissions. However, tribal agencies could use the input information from adjacent counties to inform them on local inputs that may be suitable for their tribal area MOVES runs.

MOVES inputs must be submitted to EIS as a County Database (CDB) that is a set of MySQL tables specifically formatted to store local inputs for MOVES. Prior to submitting MOVES inputs, agencies will be able to download EPA's default CDBs containing MOVES inputs by state from EIS. This default set will be in the proper format and, as detailed below, contains a mix of state-supplied data from the 2011 NEI, MOVES national defaults, and placeholders where 2014 data has not yet been collected or where EPA may use additional information

The emissions in the NEI are developed for all months of the year and all counties in every state, plus District of Columbia, Puerto Rico, and US Virgin Islands. This means that EPA will need to have county level information for every county for each month of the year. In order for MOVES to utilize this county specific data, MOVES will be run at the County Scale. This requires a separate county database for each county that contains the data specific to that county.

On a county by county basis, agencies can change the CDBs as needed to reflect their own input data, or they may choose to use the provided EPA defaults. Agencies must check their CDBs prior to submittal using the provided QA Tool that will generate a QA Report to include with submittals. Agencies should submit their CDB submittal package to the EIS QA environment to confirm there are no critical errors prior to submitting to the production environment. Agencies

that want to accept EPA's defaults and submit nothing may do so as with any other category via a 'support request' message through the EIS gateway.

It is important that each CDB submittal is a total replacement to any CDBs previously submitted by that agency. Thus, if a state submits every county in one submittal, then submits only one county in a subsequent submittal, only the one county will be present in EIS.

The following sections describe how to create/revise onroad CDBs, QA check them, and submit to EIS.

Supporting tools and files referenced here can be downloaded from the 2014 webpage: http://www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-information in the section "Onroad."

1.1 MOVES Onroad County Database Content

States are asked to supply the CDB tables listed in Table 1 below. The table indicates the contents of the CDBs and what data EPA uses as defaults. It is expected that states will have more accurate information in most cases.

The EPA document, "Using MOVES to Prepare Emission Inventories in State Implementation Plans and Transportation Conformity: Technical Guidance" (EPA-420-B-15-007, January 2015; available at http://www.epa.gov/otaq/models/moves/index.htm), describes what data states are being asked to provide and suggestions on how to obtain the needed information.

The CDB tables are intended to contain the complete set of information needed to run MOVES for all of the vehicles in a county for all months of a single calendar year (2014) using county specific information.

EPA has not yet created default CDBs for counties for calendar year 2014. The default CDBs that EPA creates will be based on information found in the CDBs used for the 2011 NEI v2. These 2011 CDBs are provided to states in the EIS and may be used by states as a starting point for generating CDBs to provide to EPA or states may provide CDBs created independently. In either case, the CDBs provided for the 2014 NEI should be complete and ready to run for the calendar year 2014.

If you are planning to use the CDBs provided by EPA as a starting point, you will want to carefully read Section 1.2.1.5.1 of this document to see how to update the year information and other 2011 data to reflect the 2014 calendar year.

The EPA-provided CDBs from the 2011 NEI v2 may contain tables not shown in Table 1. These tables are generated by scripts during the construction of the CDBs and do not affect the running of MOVES or the results and can be removed from the CDBs if desired.

Table 1: CDB Tables and ContentsCDB Table	Description of Content	EPA-Default CDB Table Content
auditlog**	Information about the creation of the database	Carried forward from the creation of the tables for 2011 by EPA. These records reflect the earlier importing of CDBs and not necessarily the current status of the data.
avft**	Diesel sales fractions	Normally this table is empty, but it may contain state-provided data from the 2011 NEI.
avgspeeddistribution	Average speed distributions	State-provided data from the 2011 NEI or national average EPA estimates.
county	Description of the county	EPA provided data.
dayvmtfraction	VMT distribution across the type of day	State-provided data from the 2011 NEI or EPA estimates.
fuelformulation	Fuel properties	Based on EPA estimates for each county from calendar year 2011. EPA will provide the 2014 values, but states must provide placeholder values to pass the QA script.
Fuelsupply	Fuel differences by month of the year	Based on EPA estimates for each county from calendar year 2011. EPA will provide the 2014 values, but states must provide placeholder values to pass the QA script.
fuelsupplyyear	Year for the fuel properties	Must be changed to 2014
fuelusagefraction	Fuel use by flexi-fuel vehicles.	Based on EPA estimates for 2011.
Hotellingactivitydistribution**	Distribution of hotelling hours using extended idle or auxiliary power units.	Based on EPA estimates for 2011.
Hotellinghours**	Hours of hotelling by long haul combination trucks.	County-specific hours for 2011.
hourvmtfraction	VMT distribution across the hours of the day	State-provided data from the 2011 NEI or national average EPA estimates.
hpmsvtypeyear	Total annual VMT by HPMS vehicle type	VMT data values from the 2011 NEI. States may provide VMT estimates by MOVES source type in SMOKE format directly for use in the 2014 NEI.
imcoverage	Description of the Inspection and Maintenance program	I/M program description carried forward from the 2011 data. The model year ranges will need to be adjusted to reflect the effect of the grace period on model year ranges for calendar year 2014.

Table 1: CDB Tables and ContentsCDB Table	Description of Content	EPA-Default CDB Table Content
Importstartsopmode distribution**	Distribution of engine starts by engine soak time.	Empty (using national average EPA estimates).
monthvmtfraction	VMT distribution across the months of the year	State-provided data from the 2011 NEI or national average EPA estimates.
onroadretrofit**	Emission adjustments to reflect local retrofit programs.	Empty (no retrofits assumed).
roadtypedistribution	VMT distribution across the road types	State-provided data from the 2011 NEI or national average EPA estimates.
sourcetypeagedistribution	Distribution of vehicle ages	State-provided data from the 2011 NEI or EPA defaults based on the CRC A-88 project for calendar year 2011.
sourcetypeyear	Vehicle populations	Vehicle population data values from the 2011 NEI
starts**	Number of engine starts	Empty (using national average EPA estimates).
startshourfraction**	Distribution of starts by hour of the day	Empty (using national average EPA estimates).
startsmonthadjust**	Variation of the starts per vehicles by month.	Empty (using national average EPA estimates).
startsperday**	Engine starts per day per vehicle.	Empty (using national average EPA estimates).
startssourcetypefraction**	Allocation of total starts to source types.	Empty (using national average EPA estimates).
state	Description of the state	EPA-provided data.
year	Year of the database	Set to 2011, but must be changed for calendar year 2014
zone	Allocations of starts, extended idle and vehicle hours parked to the county	EPA-provided data. Allocations must all be 1.0 (100%). This data should not be changed.
zonemonthhour	Temperature and relative humidity values	Temperature and humidity data are EPA-provided data for each county from calendar year 2011.
zoneroadtype	Allocation of road types to the county	EPA-provided data. Allocations must all be 1.0 (100%). This data should not be changed.
countyyear*	Description of the Stage 2 program	State-provided data from the 2011 NEI or EPA default values for each county.
emissionratebyage*	Implementation of California standards	The EmissionRateByAge tables for some counties have been populated using the appropriate data described in the guidance for states adopting California emission standards. See notes below ***

*Tables that are not created by MOVES County Database Manager (CDM), but are generated as empty tables by the QA tool that checks CDBs for EIS submittal

**Tables that can be empty but must be present in EIS submittal

*** The following states were given early NLEV programs in the EPA defaults :

- Connecticut (9)
- Delaware (10)
- District of Columbia (11)
- Maryland (24)
- New Hampshire (33)
- New Jersey (34)
- Pennsylvania (42)
- Rhode Island (44)
- Vermont (50)
- Virginia (51)

The following states were given California LEV programs beginning on the following dates:

FIPS State ID	State Name	LEV Program Start Year
6	California	1994
9	Connecticut	2008
10	Delaware	2014
23	Maine	2001
24	Maryland	2011
25	Massachusetts	1995
34	New Jersey	2009
36	New York	1996
41	Oregon	2009
42	Pennsylvania	2008
44	Rhode Island	2008
50	Vermont	2000
53	Washington	2009

1.1.1   County Database Naming Convention

In order to keep track of the thousands of CDBs used in the NEI calculations, EPA has established a naming convention for the CDB names that will differentiate between databases and make automation of running and processing the inputs and outputs from MOVES easier.

The naming convention for each CDB folder has 20 characters. The first 6 characters identify the county, the next 5 indicate the calendar year of the county database, and the last characters indicate the date on which the database was created.

The first 6 characters are the letter "c", followed by the 5 digit Federal Information Processing Standard (FIPS) code for the county, including a leading zero when necessary. The next 5 characters are the letter "y", followed by a 4 digit calendar year. This calendar year indicates the calendar year of the data contained in the database. A CDB can only contain data from a single

calendar year. The last 8 digits, following and underscore character, are the date on which the database was created in a YYYYMMDD format.

An example of a CDB name is "c26161y2014_20150601" where this CDB names indicates "c26161" refers to the county FIPS code (in this case Washtenaw County, Michigan). "y2014" refers to the calendar year for the county database and "20150601" identifies the database modification date of June 1, 2015, in YYYYMMDD format.

1.2   Steps to Submit CDBs

1. Create CDBs
    a. Edit existing CDBs to meet NEI requirements or
    b. Create new CDBs from scratch or
    c. Revise EPA defaults.
2. Run EPA's QA Tool to create a QA report that confirms no errors exist.
3. Create a Checklist that indicates where changes have been made to the EPA CDBs
4. Provide documentation for the Agency- supplied inputs.
5. Submit the files to the EIS.

1.2.1   Creating County Databases

When submitted CDBs are used as input to MOVES during a run, MOVES will recognize the tables contained in the folder (based on their name and format) and use the information they contain instead of EPA default values. In this way, a MOVES run can be made more representative of the county to be simulated.

There are many ways to create a county database for submission. We will discuss some of the methods that we expect might be used and provide some suggestions. The methods we will discuss are:

- Using the County Data Manager
- Using XML scripts
- Using MySQL

We will also discuss methods to automate the creation of multiple CDBs.

If you have existing CDBs that can be used for the NEI with little or no editing, using these as a starting point would be your best option. Otherwise, EPA suggests starting with the EPA-provided default databases and editing their contents as the easiest way to quickly produce a set of CDBs for your state. However, any method that can generate appropriate tables containing the county specific data in the appropriate format that can be recognized and used by MOVES are acceptable.

Since the CDBs will be in a MySQL format, it is helpful to have some MySQL database application skills, including using standard query language (SQL). However, there are tools

available that can help to view, alter and export MySQL tables. The MySQL Query Workbench is distributed with the MOVES application and provides a graphical user interface (GUI) that allows tables to be viewed, altered and exported without SQL commands. We recommend that this application be available for use when creating and editing databases.

Since MySQL CDBs are simply folders containing files that make up the tables, users can simply move and copy the folders and the files they contain as they would any other files on their drives. This feature provides some additional flexibility in generating new CDBs, since these folders and files can be manipulated using standard DOS commands in batch files and scripts.

Step by step instructions of how to use MySQL query commands to alter the contents of tables is beyond the scope of this document. This approach should only be considered by states with available staff familiar with MySQL query language. The discussion here of creating and editing CDBs will cover alternatives to using the query language alone.

1.2.1.1   Using Existing County Databases

For the NEI, EPA prefers to receive existing CDBs that states/local agencies have created for their own use. These may need to be updated for the NEI year (2014) and possibly expanded to cover all months of the year using some of the editing tools described below. They also need to be checked for errors with our NEI CDB QA Tool as explained in Section 1.2.2.

1.2.1.2   Editing EPA Default Databases

EPA has provided a set of all CDBs for calendar year 2011 containing the values used for the 2011 NEI v2. States can download the 2011 NEI CDBs from EIS and make changes to make them suitable for 2014. States only need to submit CDBs for counties for which they have made changes. Counties that are not submitted will use EPA default estimates. However, EPA encourages agencies to review the information found in all their county databases and make changes where better county specific information is available.

To retrieve the EPA CDM default tables, log into the EIS Gateway, go to the "View/Add/Edit" link, choose "CDB Activity Data", "EPA Default", and choose "2014" in the "Inventory Year" drop down menu. Find your agency's CDB zipped CDB data base to download as indicated by the figure below.

EIS Gateway

Laurel Driver; EIS; Content Manager Role; Authenticated Role; Inventory Developer Role

VIEW/ADD/EDIT
» Facility Inventory and Point Emissions
» Potential Duplicate Facilities
» Merge Processes
» Nonpoint/ Onroad/ Nonroad Emissions
» Event Emissions
» NCD Activity Data
» CDB Activity Data
» Inventory Selection
» Schedule Augmentation
» Data Tagging

REPORTS
» Request Reports
» Report Downloads
» Large File Download
» Feedback Reports
» Agency Submission History Report
» Data Tagging Administration Report

REFERENCE DATA
» Reporting Code Tables

CDB Data

EPA Default | Agency

EPA DEFAULT CDB DATA SETS

Inventory Year: 2014

State	Submitted	File Size (KB)		
Alabama	2015-05-05 11:48 AM	106,909	Download State CDB Data Set	View Submission History
Alaska	2015-05-05 12:35 PM	39,765	Download State CDB Data Set	View Submission History
Arizona	2015-05-05 11:52 AM	26,789	Download State CDB Data Set	View Submission History
Arkansas	2015-05-05 11:53 AM	118,255	Download State CDB Data Set	View Submission History
California	2015-05-05 11:54 AM	103,746	Download State CDB Data Set	View Submission History
Colorado	2015-05-05 11:55 AM	101,228	Download State CDB Data Set	View Submission History
Connecticut	2015-05-05 11:55 AM	14,202	Download State CDB Data Set	View Submission History
Delaware	2015-05-05 11:58 AM	6,062	Download State CDB Data Set	View Submission History
District of Columbia	2015-05-05 11:58 AM	1,823	Download State CDB Data Set	View Submission History
Florida	2015-05-05 12:06 PM	113,231	Download State CDB Data Set	View Submission History
Georgia	2015-05-05 12:08 PM	249,079	Download State CDB Data Set	View Submission History
Hawaii	2015-05-05 12:08 PM	7,484	Download State CDB Data Set	View Submission History
Idaho	2015-05-05 12:08 PM	67,238	Download State CDB Data Set	View Submission History
Illinois	2015-05-05 12:10 PM	179,474	Download State CDB Data Set	View Submission History
Indiana	2015-05-05 12:11 PM	158,313	Download State CDB Data Set	View Submission History
Iowa	2015-05-05 12:11 PM	138,854	Download State CDB Data Set	View Submission History
Kansas	2015-05-05 12:14 PM	159,285	Download State CDB Data Set	View Submission History
Kentucky	2015-05-05 12:16 PM	197,690	Download State CDB Data Set	View Submission History
Louisiana	2015-05-05 12:16 PM	105,093	Download State CDB Data Set	View Submission History
Maine	2015-05-05 12:19 PM	24,779	Download State CDB Data Set	View Submission History
Maryland	2015-05-05 12:19 PM	46,818	Download State CDB Data Set	View Submission History

The EPA-provided CDBs should be loaded into your MySQL database system by copying the CDB folders into the MySQL\data directory.

The EPA CDBs can be edited directly in several ways. First, the MySQL Query Workbench allows users to change values in database tables, one value at a time. If only a few changes are needed, this may be the easiest way to make changes. If many changes are needed, the user should consider other options.

The MOVES County Data Manager (CDM) can be used to export the contents of most of the tables found in the CDBs into spreadsheets or comma separated value (CVS) text files to be edited. Once the changes have been made, the CDM can clear the old data and import the new values from the files. This process does not involve using any query language code or knowledge of database commands. However, it requires making the changes one table, one database at a time. The XML scripts described below can also be used to import data from spreadsheets or CSV text files containing altered information directly into existing EPA default CDBs. By including only tables that contain county specific data, you can limit the tables affected by the XML code to just the tables that will contain the county specific data and keep the default data in the other tables. These updates can be automated to apply to multiple databases at once to apply the changes quickly to all of the counties affected.

Of course, the data in any tables can be manipulated directly using MySQL query language.

1.2.1.3 Using the County Data Manager

The MOVES graphical user interface (GUI) is designed to allow users to create and edit CDBs without using database language commands (SQL) through the use of "importers" contained in the CDM GUI panels. Once data has been imported into a county database, the CDM can generate a XML script that can be used to recreate the database from the input files using the command line interface option of MOVES. The XML feature is useful if many changes are being made or are expected to be made to the input files. The process of creating CDBs using the CDM is described in detail in the MOVES User Guide. Using the CDM to create CDBs will require that you create a run specification for each county for which you wish to create a county database. You can download an example run specification file (c10001y2014.mrs) from the 2014 NEI webpage.

1.2.1.3.1 Tables not Created by the CDM

The CDBs created by the CDM do not contain all of the tables expected by EPA in an EIS submittal. However, the CDB QA Tool that is required to be run on all CDBs submitted by states will generate (empty) tables in all tested databases and provide an indication in the report that the tables were initially missing. This script will not populate the tables with data. This will need to be done manually if you want these tables to contain data for that county.

- The EmissionRateByAge table is intended to contain information related to the use of California standards, which is not contained in the MOVES default database and must be obtained separately. The default CDBs provided by EPA already have data in the EmissionRateByAge table for all counties in states that we believe are using California standards. You should not add data to the EmissionRateByAge table if you have not implemented California standards in your state. You can find out more about how to model California standards and obtain the emission rate data on the EPA web site at:

    http://www.epa.gov/otaq/models/moves/tools.htm

- The CountyYear table includes fields describing a county's Stage II program to reduce refueling emissions. The default CDBs provided by EPA already have data in the CountyYear table for all counties that we believe have these programs.

1.2.1.4 Using XML Scripts

XML was designed to carry data, not to display data. MOVES has a feature that allows users to supply specific XML information that can be used by MOVES to construct CDBs from a set of spreadsheets or CSV text files. This feature can be used to quickly create CDBs without using the MOVES graphical user interface (GUI) and automate the process to create multiple CDBs using a single command.

The MOVES CDM Tools panel can create XML files that can be used to create CDBs. Since XML files are simply text files, the XML file can be edited using any text editor (such as Notepad) to create new XML files that can generate more CDBs. Using naming conventions for the data files and CDBs, modelers may create a set of XML files that will create all of the CDBs for a state. These XML files can be run together in a batch mode to create all of the CDBs for a state using the command line option of MOVES and a DOS batch file. The creation and use of importer XML files is addressed in the MOVES User Guide in Section 2.3.3.3 Tools (http://www.epa.gov/otaq/models/moves/index.htm#downloading).

EPA has created a XML template for creating CDBs for submission to the NEI. This XML template can be used instead of creating a template XML using the MOVES CDM. A ZIP file on the 2014 NEI webpage (Generic_County_2014.zip) includes the instructions for using the XML template and how to edit the XML code for individual counties, using an example set of spreadsheets. The example also includes an example batch file for creating multiple CDBs.

The XML approach does assume that the states will have all of the information needed for the CDBs for every county to be processed and that this information can be found in the proper format in a set of spreadsheets or CSV text files. The automated process of creating the databases can be repeated whenever the contents of any of the spreadsheets or CSV text files is updated.

1.2.1.5   Using MySQL

All of the tables in the CDBs can be created or edited directly using MySQL commands. Step by step instructions of how to do this are beyond the scope of this document. However, in some cases, it may be useful to use MySQL directly, rather than the tools being provided by EPA. There is no restriction on the use of MySQL or other tools in the creation of the CDBs, as long as the resulting CDBs are properly formatted and populated for use with MOVES.

1.2.1.5.1   Converting Databases from Other Calendar Years

In some cases, states may have CDBs for other calendar years that would make a good start for creating CDBs for the 2014 calendar year. As discussed above a database folder can be easily copied and renamed to reflect a new calendar year. The contents of the tables can then be edited to change the calendar year to 2014, which would allow the tables to be used with a run specification that selected the 2014 calendar year. This editing can be done manually using the MySQL Query Workbench, one entry at a time, but is better done using simple MySQL query commands as shown below.

There are ten tables normally found in a CDB that contain calendar year information. These values can be easily changed to a new calendar year using a series of "update" commands. Below is an example of the set of update commands to change the calendar year of the tables to 2014. The "use" command selects the database to be altered. The "c26161y2014_20150601" string refers to the database name, following the EPA naming convention for CDBs. The

"c26161" refers to the county FIPS code. "y2014" refers to the calendar year for the county database and "_20150601" as a database created on June 1, 2015, in YYYYMMDD format.

use c26161y2014_20150601;

update countyyear set yearid=2014;

update hpmsvtypeyear set yearid=2014;

update hotellinghours set yearid=2014;

update imcoverage set yearid=2014;

update sourcetypeagedistribution set yearid=2014;

update sourcetypeyear set yearid=2014;

update starts set yearid=2014;

update startsperday set yearid=2014;

update year set yearid=2014;

update year set fuelyearid=2014;

Section 1.2.1.2 describes how to create and use a MySQL script to execute these commands.

Once the calendar year has been changed, the state or local agency is still left with the task of updating the other values in the tables to reflect the 2014 calendar year. In particular, the model year coverage in the IMCoverage table needs to properly reflect the change in the calendar year. The age distribution values in the SourceTypeAgeDistribution table may also need adjustment to reflect sales and scrappage. Changing the contents of the tables using the CDM is discussed in the MOVES User Guide. The databases can be updated for 2014 using the XML importer discussed above as well.

1.2.1.6   Automating the creation of multiple databases

The XML importer scripts described in Section 1.2.1.4 above are the easiest way to create or make changes to multiple existing CDBs without using MySQL commands. The new data for the counties can reside in MS Excel spreadsheets or CSV text files and be edited in those formats or output into those formats from other applications. Using batch files and command line options in MOVES, the XML for each county can be run to create/alter the existing CDBs. A compressed data file (Generic_County_2014.zip) can be obtained from the 2014 NEI webpage, which contains example files and instructions (Generic_CDB_Creator_Instructions_2014.docx) for using XML files in batch files for creating or editing multiple databases.

Scripting tools (Perl, Python, etc.) can also be used to create scripts that will process multiple databases using MySQL commands to make the desired changes. You will need staff who are familiar with these tools. Detailed instructions for creating these tools is beyond the scope of this document, however, you may contact EPA if you intend to use this approach for suggestions.

1.2.2 Use the CDB QA Tool to Create a QA Report to include with your submittal

From the 2014 NEI webpage, download and unzip "MOVES_Input_QA_Tools_v1.zip" which contains the QA Tool (MOVES_Input_QA_Tool_2014_v1.sql) and an example script (Example_Run_QA_Checks_2014_v1.bat) that allows you to automate the QA process for more than one county (discussed below). MOVES_Input_QA_Tool_2014_v1.sql will create a QA Report that is required in your MOVES CDB submittal. The QA Report generated by the QA Tool script verifies all table contents meet range, naming convention, format and other checks. The report confirms that each CDB contains the appropriate number of tables and that the values within those tables are valid. It is very important that the QA tool be properly run for each submitted CDB, because if is not and the CDB contains errors that are not resolved, the data may not work when we go to generate the NEI and we will need to follow up with you at that time, or we may not be able to use your submitted data. EIS will check to see that each county listed in this report has an associated CDB in the submission. Only include counties in the QA report that you will be submitting. If the counties in the QA report do not match those in the CDB folder, or if any errors are indicated in the QA report, EIS will indicate a critical error and will not accept the submission. Format is .txt, but this file can be opened as a table using Microsoft Excel to make it more readable.

IMPORTANT NOTE: All 32 tables listed in Table 1 above are required, although some may not be populated. If you create the CDBs using the CDM (from scratch) the CDM will create 30 tables. Your CDB will be missing two tables:

> o EmissionRateByAge
> o CountyYear

Running the QA Tool will create these tables in your CDB, but the tables will all have zero rows (i.e., they will be empty). Leaving these tables empty will not cause the CDBs to fail the script if it is run again. Thus, if you create the CDBs using the CDM, your initial run of the QA will indicate errors (missing tables). However, if you run the QA Tool again, the tables have been created by the previous check and the "missing tables" error will no longer appear in the report. You can send the second QA report (with no errors) to the EIS.

Also, the QA tool uses tables from the default MOVES database that was distributed with MOVES2014. If you do not have MOVES2014 installed, you will need to obtain a copy of the database folder and place it in your MySQL\data directory.

Name your QA report with your agency Program System Code (PSC), such as "PSC_QA_Report.txt". For example, Delaware's state agency PSC is "DEDNR" and their QA report would be named "DEDNR_QA_Report.txt".

If your state has many counties, you may wish to automate the checking process. Below is an example of a batch file written to check the three counties for the state of Delaware. The batch file deletes the old version of the report text file (named with the PSC), clears the MySQL buffer of previous work and drops the database used to store the aggregated results from the individual checks. Then MySQL is directed to each county database (i.e., c10001y2014_20150601) using the QA Tool script (MOVES_Input_QA_Tool_2014_v1.sql). Note that the directory path must be included so that the file can be properly located by MySQL. The path you use can be different than the location (C:\MySQL\) shown in this example. The final line in the batch file exports the results into the report text file. A directory path can be added to this file name as well to help locate the file once it has been populated.

```
del DEDNR_QA_Report.txt
mysql –uXXXXX -pYYYYY -e "flush tables;"
mysql –uXXXXX -pYYYYY -e "drop database if exists all_cdb_checks;"
mysql –uXXXXX -pYYYYY c10001y2014_20150601 < C:\MySQL\QA_Checks_2014_v1.sql
mysql –uXXXXX -pYYYYY c10003y2014_20150601 < C:\MySQL\QA_Checks_2014_v1.sql
mysql –uXXXXX -pYYYYY c10005y2014_20150601 < C:\MySQL\QA_Checks_2014_v1.sql
mysql –uXXXXX -pYYYYY -e "select * from all_cdb_checks.all_county_database_checks;" >
DEDNR_QA_Report.txt"
```

The XXXXX value is the MySQL user name and the YYYYY value is the MySQL password. The script (QA_Checks_2014_v1.sql) is located in the C:\MySQL\ directory in this example. The file generated by this script (DEDNR _QA_Report.txt) is the quality assurance (QA) report required by the EIS process.

Example of QA Report Results

In this example, there is an error with the AvgSpeedDistribution table. The submission has a distribution that adds to zero (0.0). This entry (i.e., all zeros) can inadvertently eliminate any VMT associated with that combination and cause an incorrect result. The sum of the fractions in the AvgSpeedDistribution table must add to 1.0 for every combination of SourceTypeID, RoadTypeID and HourDayID, even if the Source Type, Road Type or HourDayID do not have VMT associated with that combination. Never fill distribution tables with zeros. You can use the default distribution if no county specific values are available.

The "status" category may not contain any "Error" entries in order to successfully pass QA. The report will pass if only any of these entries appear:

1) Completed – this indicates a successful check.

2) Warning – This indicates the user-supplied values that may not have been intended (i.e., distributions that sum to zero), but will not cause MOVES to generate inappropriate results.

3) Comment – This will indicate that IMCoverage table contains no user supplied rows to be checked.

Name your QA report with your agency ProgramSystem Code (PSC), such as "PSC_QA_Report.txt". For example, Delaware's state agency PSC is "DEDNR" and their QA report would be named "DEDNR_QA_Report.txt".

1.2.3   Create Your CDB Checklist

From the 2014 NEI webpage, download the QA checklist "MOVES_Onroad_County_Checklist.xlsx". This spreadsheet will contain rows for every county in the nation. You can trim this list to only include the counties in your state.

This checklist is intended to indicate which tables your agency has revised from EPA's defaults for each county's CDB. It also indicates counties for which the submitter accepts EPA default estimates as equivalent to their submittal. The list you submit should include all of the counties in your state, even if you are only submitting CDBs for some of the counties.

Example of Checklist

Name your checklist with your agency ProgramSystem Code (PSC), such as "PSC_Checklist.xls (or xlsx)". For example, Delaware's state agency PSC is "DEDNR" and their checklist would be named "DEDNR_Checklist.xls".

The purpose of the checklist is to provide a method to determine which parts of the state submission contain new information. This will greatly assist EPA is using this information for making projections to other calendar years.

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1.2.4 Documentation

All submissions must include a documentation document. At a minimum, the documentation should address all of the changes made by the state to the EPA provided CDBs. For each change, the document should state briefly the source of the state supplied information used to populate the CDB. References to other documents with more detail are encouraged.

If you created the CDBs from scratch (not editing the EPA provided CDBs), please document where local data were used and where default data from MOVES were used.

You may include additional documentation files which are referenced by the main documentation. These additional files can be in any format (e.g., .pdf or .xls).

Name your documentation with your agency ProgramSystem Code (PSC), such as "PSC_Documentation.doc (or docx)". For example, Delaware's state agency PSC is "DEDNR" and their documentation would be named "DEDNR_Documentation.doc". Any additional files provided can keep their original names and do not need to conform to any standard.

1.2.5 Bundle CDB Submittal Components and Create the XML for EIS Submittal

Once you have prepared the parts of your submittal, you'll need to zip them together in a specific way and reference them with the EIS/CDX required XML file. The CDBs are folders located in the MySQL/data directory on your system. Once you have completed creating/editing the CDBs for your state, these folders and their contents are to be included in the zip file for submission. The graphic below shows that the individual CDBS are zipped into one zip file. That zip file and the remaining parts (QA report, checklist, and documentation) are then zipped into a zip folder.
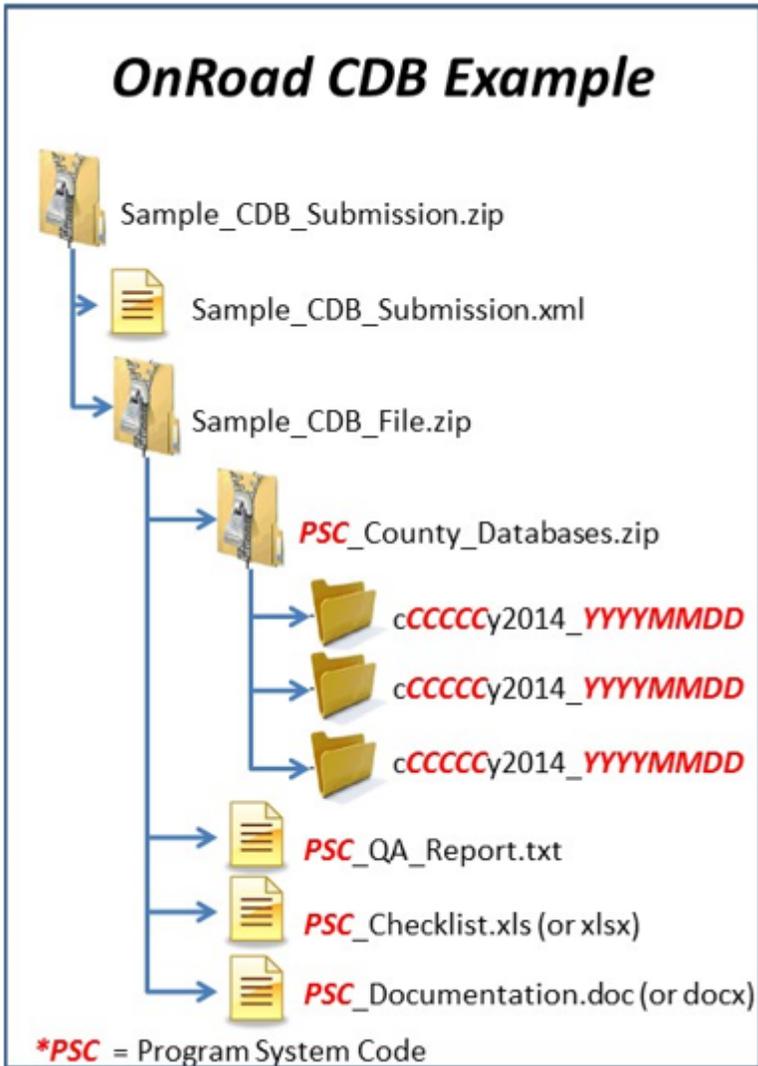
1.2.5.1 Creating the EIS/CDX-required XML

There are two ways to create the xml file

1. Use notepad or other editing software to edit the sample xml
   [cdb_sampleheader.xml] which you can download from the 2014 NEI webpage.

Edit the red text shown below:

```
<hdr:Document id="IDxx" xmlns:hdr="http://www.exchangenetwork.net/schema/header/2
       xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
       xsi:schemaLocation="http://www.exchangenetwork.net/schema/header/2
       http://www.exchangenetwork.net/schema/header/2/header_v2.0.xsd">
  <hdr:Header>
    <hdr:AuthorName>Your Name</hdr:AuthorName>
    <hdr:OrganizationName>Your Organization</hdr:OrganizationName>
    <hdr:DocumentTitle>EIS</hdr:DocumentTitle>
    <hdr:CreationDateTime>2014-10-10T14:02:39</hdr:CreationDateTime>
    <hdr:Keywords></hdr:Keywords>
    <hdr:Comment></hdr:Comment>
    <hdr:DataFlowName>EIS_v1_0</hdr:DataFlowName>
    <hdr:Property>
      <hdr:PropertyName>SubmissionType</hdr:PropertyName>
      <hdr:PropertyValue>QA</hdr:PropertyValue>
    </hdr:Property>
    <hdr:Property>
      <hdr:PropertyName>DataCategory</hdr:PropertyName>
      <hdr:PropertyValue>Onroad</hdr:PropertyValue>
    </hdr:Property>
    <hdr:Property>
      <hdr:PropertyName>CDBDataFile</hdr:PropertyName>
      <hdr:PropertyValue>Sample_CDB_File.zip</hdr:PropertyValue>
    </hdr:Property>
  </hdr:Header>
  <hdr:Payload>
    <cer:CERS xmlns:cer="http://www.exchangenetwork.net/schema/cer/1"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xsi:schemaLocation="http://www.exchangenetwork.net/schema/cer/1
        http://www.exchangenetwork.net/schema/cer/1/index.xsd">
      <cer:UserIdentifier>youruserid@xyz.gov</cer:UserIdentifier>
      <cer:ProgramSystemCode>yourPSC</cer:ProgramSystemCode>
      <cer:EmissionsYear>2011</cer:EmissionsYear>
    </cer:CERS>
  </hdr:Payload>
</hdr:Document>
```

2. Use the EIS Access Bridge Tool (as revised May in 2015).
    1. Download the "Area Emissions Inventory Bridge Tool" from
       http://www.epa.gov/air-emissions-inventories/emission-inventory-tools.
    2. Open the file in Microsoft Access.
    3. Choose the "Export Onroad/NonRoad XML Wrapper" from the Main Menu
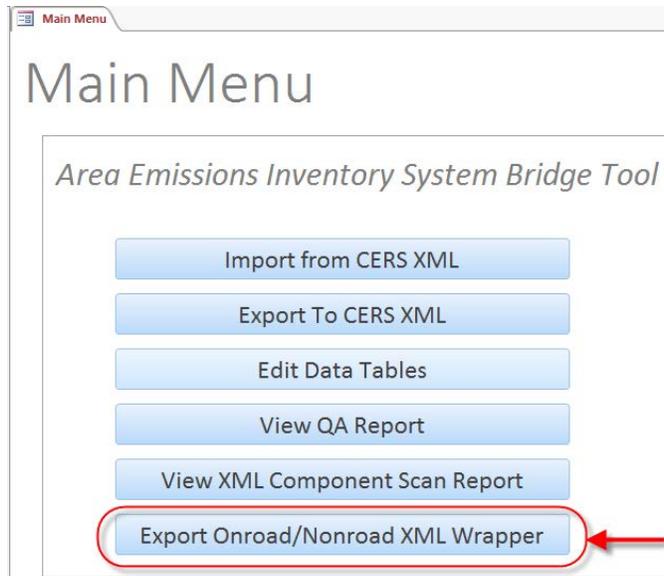
4. Fill out the form with the appropriate information
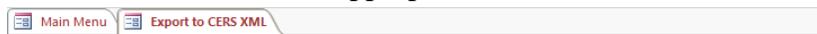
a. File Location = The name and location where the resulting XML file will be generated.
b. Data Category: Choose either "Onroad"
c. Emissions Year: Set to 2014
d. Submission Type: Choose either "QA" or "Production"
e. Activity Database Type: Set to "CDB"

f. Activity Database File: The name of the packaged set of zip files. Using the earlier example: "Sample_CDB_Submission.zip"

g. User Identifier: Your EIS User ID

h. Author Name: Your name (optional)

i. Organization Name: The name of your organization (optional)

j. Program System Code: The program system code of your organization

k. EPA Dataset: Leave blank

l. Keywords: Any keywords you would like to submit about the document (optional)

m. Comment: Any comments about the document (optional)

5. Press the "Begin Export" button. Your file will be generated to the location specified.

NOTE: Each CDB submittal is a total replacement to any CDBs previously submitted by that agency. Thus, if a state submits every county in one submittal, then submits only one county in a subsequent submittal, only the one county will be present in EIS.

You can check the feedback on your submittal in EIS by choosing your agency and the "Feedback Reports" tab as shown in the figure below:

EIS Gateway—Agency Organization Detail: Feedback

1.3   Additional Resources

For additional Assistance contact

Submittal Issues

  -Sally Dombrowski – dombrowski.sally@epa.gov; 919-541-3269

Inventory Issues

  -Laurel Driver – driver.laurel@epa.gov; 919-541-2859

CDB Content Issues

  -David Brzezinski – brzezinski.david@epa.gov; 734-214-4235

MOVES Issues

-mobile@epa.gov