Internet Data Upload Software Application
Status Report

Pursuant to Public Law 146-2008, Sec. 277

June 30, 2008

Cheryl Musgrave, Commissioner
I. INTRODUCTION

History

In the fall of 2007, leaders within the agency began to investigate ways in which to streamline the data gathering processes for which the Department had oversight. Under processes in place at the time, staff members were required to hand-inspect each of the 20 or so data sets that counties are required to supply. A vast majority of these checks were time-consuming checks of formatting errors, obvious typographical errors, and other kinds of rote compliance checks. Four DLGF analysts would spend 5 days a week, several months of the year, correcting these rote compliance errors. Department tax analysts are highly skilled and trained professionals, and this took valuable time away from applied data analysis, research, and other important tasks. The time consuming, tedious checks also led to inconsistent decisions, slow processing, and an overall lack of urgency from Department staff in getting this data certified.

With this in mind, the Department began to reach out to the Legislative Services Agency (its partner in data gathering and compliance testing) and the Indiana Business Research Center and, inspired by other state agencies taking bold steps toward innovation, began to formulate the strategy behind the Data Upload Software Application (often referred to as a “tool”).

An innovative partnership

The Department saw the obvious merit in creating a streamlined, time-efficient review process to facilitate the collection and approval of county property tax data. The problem soon became apparent, however—the type and scope of software application to be developed for this project would be incredibly expensive to develop, and it would take a prohibitively long amount of time to procure and implement through traditional channels. Fortunately, however, the Indiana Business Research Center (IBRC) stepped in. IBRC, an arm of Indiana University’s Kelley School of Business and a nationally-renowned economic data organization, has long been involved with state agencies and was actively seeking to get involved in the Indiana property tax discussion.

In partnership with the IBRC, the Department began to develop a web-based data submission system that would automatically and rapidly run these preliminary checks, doing in hours what at the time took days to accomplish. As staff time permitted, the Legislative Services Agency was also an active partner in the development of this software application.

How the system works

The concept of the system is simple. When the data is ready to be tested or certified, the county official logs into the system using their own secure password. Once in the system the official has the option, based on which office is submitting the data (assessors submit
assessing data, auditor submit tax billing data), to select the appropriate data set and year. Once that selection is made, the official simply clicks the submit button and the data is uploaded to the state. Immediately upon receipt by the system a number of data queries are made, and the official receives instantaneous feedback on some of the more common checks made to the data. Once the data is uploaded, more in-depth queries are run over the next several hours. Once these checks are made, the official receives an e-mail report of the results of the data check and any errors that are present.

The data upload system is capable of allowing counties to officially submit data, as well as the option of testing their data prior to official submission. Currently the test submission system is live, while the official submission capability is under development. A number of counties have already taken advantage of the testing feature as a way of cleaning their data and readying it for final, official submission. Since the software application is not yet set to handle official submissions, the data is delivered to the Department and LSA for the final review and certification as has been done historically via e-mail or other media deliveries.

As the project approaches its first full year, the working group has great reason to be proud of its accomplishments. In the span of six months, these three state-affiliated agencies working in cooperation developed and implemented a groundbreaking technology suite (worth millions of dollars, if developed by a third-party vendor) that is revolutionizing the way property tax data is collected.

Streamlining and automating this process pays dividends for county officials, the Department, and the General Assembly. County officials, previously unclear about the nature and scope of the errors in their data, now have a much clearer understanding of the data and are now more empowered to correct it. Automating this process allows the Department to redirect the efforts of previously encumbered staff members to more timely and valuable analytical functions. Last but certainly not least, this software program and the solutions it provides gives legislators and their staff more and better data on which to base their decisions, leading to better decisions and more responsive solutions to property tax problems.

II. COMPLIANCE WITH STATUTORY REQUIREMENTS

1. Maintain the confidentiality of data that is declared to be confidential by IC 6-1.1-5.5-3, IC 6-1.1-5.5-5, IC 6-1.1-35-9, or other provisions of law.

In response to concerns about the privacy of the confidential data outlined above, the Internet Data Upload Software Application contains a number of security features to ensure that this data is protected.

- Login to the system is via secure login only.
- Files are uploaded via encrypted file.
- Uploaded confidential files are stored on a dedicated secure server.
In the Memorandum of Understanding signed between the IBRC, the DLGF, and LSA, there are strict requirements in place that mandate that any confidential information be handled and stored in a way that does not jeopardize its security.

In mid-May the Department sent a memo to all county assessors clarifying how Social Security Numbers can and cannot be used in relation to data submission requirements for personal property. In this memo, the Department also requested that the Assessors affirm that their data either does not contain Social Security Numbers, or if it does to identify which, if any, of their historical data sets could possibly contain this confidential information. As of the date of this report, 38 counties have submitted this information.

2. Provide prompt notice to the Department of Local Government Finance and Legislative Services Agency of the receipt of data from counties and townships and other critical events, as jointly determined by the Department of Local Government Finance and the Legislative Services Agency.

When the test software application initially went live to the counties in March of 2008, the DLGF would prepare a weekly summary report of the activity on the site. Once LSA received accounts and passwords to the site (See #5, below), these reports were stopped—instead, through the administrative tools on the website, all authorized users can download pertinent account activity on demand. In addition to this upload register, both the DLGF and LSA have the option of receiving e-mail notification when a county uploads a data set.

As the project moves forward, the DLGF and LSA are working with IBRC to implement notification requirements in the event of other critical events. These would include system outages (both planned and unplanned), down servers, and other occurrences that would cause problems with the operation of the system. In addition, the DLGF is working with the IBRC to acquire system documentation in the event that the relationship between the agencies is somehow changed in the future.

3. Maintain data in a form that formats the information in the file with the standard data, field, and record coding jointly required and approved by the Department of Local Government Finance and the Legislative Services Agency.

As part of the basic reporting, the online software program tests for compliance with established format specifications contained within the published Data Standards 50 IAC 23. These standards have been automated and files matched to both format and, wherever possible, to content specifications. Content is verified through applying standard code lists to designated fields, as well as verifying expected content such as dates in date fields or number values in currency fields. Exceptions to standards and content are provided in basic reports that are made available to authorized county and state users.

The content of historical files has not been reviewed to meet these same published data standards, except when failing high level analysis criteria as determined through the data
certification processes, such as PARCEL file assessed valuation totals equaling those found in the ABSTRACT files submitted by counties. As a consequence, the adherence to standards verification and processing of historical files has required a large number of unexpected exceptions to be programmed and allowed in order to run basic reporting on historical datasets that have previously been certified by the State. This has had the added benefit of giving counties a look at their data under a new microscope—many counties, in fact, are using the reports run against this historical data as a means of checking their current data for systematic data problems before even running them through the test phase.

The more advanced reporting encompasses the state data certification process for County data submissions which has historically been divided into two separate and distinct components, each run by a separate agency DLGF and LSA. The advanced reporting includes higher-level cross-file analysis. The DLGF portion of these analysis queries have been programmed and are currently in final review. The LSA-supplied analysis queries are still in the process of being converted to the new system and programmed by IBRC.

The upload tool currently allows Counties and State agencies to submit data in test mode. Test mode allows authorized users to upload and run data files through the standardized verification and quality control checks to determine what, if anything, may need reviewed and/or corrected prior to officially submitting the files to the state for certification. Counties are strongly encouraged to make use of the testing mode so that any problems can be corrected prior to official submission. The testing mode can be used as many times as necessary to assure the quality and accuracy of the content of the files prior to official submission.

Official county submissions are currently made through LSA, because the official upload option is currently unavailable to authorized users using the online data upload software application. The official upload processes make use of the same basic and advanced reporting as the test application, with lower tolerances and more stringent controls. As mentioned the DLGF advanced report content are in final review with LSA content under development. The official upload will be made available after these advanced reports have been finalized and tested.

4. Provide data export and transmission capabilities that are compatible with the data and export and transmission requirements prescribed by the Office of Technology established by IC 4-13.1-2-1 and jointly approved by the Department of Local Government Finance and the Legislative Services Agency.

DLGF provides public access to data exports of county data submissions, except those identified as personal property and confidential via the internet: assessed value at http://www.in.gov/dlgf/4931.htm; sales disclosure at http://www.in.gov/dlgf/5584.htm; tax billing at http://www.in.gov/dlgf/4929.htm. Availability of these data online provides improved access and availability to the local officials and the general public free of charge. Online access is the most cost effective means of making this data available to
the local officials and the public, reducing DLGF staff time fulfilling specialized data requests.

5. **Provide to the Legislative Services Agency and the Department of Local Government Finance unrestricted online access and access through data export and transmission protocols to: (A) The data transmitted to the system; and (B) hardware, software, and other work product associated with the system; including access to conduct the tests and inspections of the system and data determined necessary by the Legislative Services Agency and access to data received from counties and townships in the form submitted by the counties and townships.**

As key partners in the development of this software application, the Department and LSA have both served as architects of this program. As such, it is important that these agencies have unlimited access to all operational aspects of the data upload system. The Memorandum of Understanding between the agencies outlines the requirements of the IBRC to the DLGF and LSA to provide access to the data and associated systems.

As co-administrators of the system, both agencies have unlimited and unfettered access to all data and reports generated by the system as well. In addition to being able to access the information uploaded by counties, however, each agency and key staff members have system accounts with passwords. This gives each agency the ability to upload and test sample data sets, generate reports, and utilize all of the tools available to county users.

6. **Maintain data in a manner that provides for prompt and accurate transfer of data to the Department of Local Government Finance and the Legislative Services Agency, as jointly approved by the Department of Local Government Finance and the Legislative Services Agency.**

The system is still in the early stages of usage, and as such users and administrators are still learning how effective it is and where changes are needed. The system has not yet officially been opened to official data submissions—there are still issues that need to be addressed and corrected before it is ready to be used for that purpose. These minor corrections notwithstanding, however, the utility of the system has been demonstrated by the multiple data sets uploaded by counties in “test” mode. Both the DLGF and LSA have full, real-time access to the data as it is uploaded for testing, allowing both agencies to review the tested data even before it is submitted for official consideration.

7. **The Department of Local Government Finance and any third party system provider shall provide for regular consultation with the Legislative Services Agency concerning the development and operation of the system and shall provide the Legislative Services Agency with copies of system documentation of the procedures, standards, and internal controls and any written agreements related to the receipt of data and the management, operation, and use of the system.**
From the beginning the Department and the IBRC have each placed great emphasis on including LSA in the discussions and work groups for the upload software application and giving full weight to the agency’s opinions and requirements; as such, the final product is greatly indebted to the work of LSA staff members who have given a great amount of time, effort, and input to ensuring a product that works for all stakeholders. During these meetings the IBRC shares a great amount of information about the system, current issues, and issues that need to be addressed. LSA and DLGF, in turn, share the state’s concerns and each agency’s opinions and priorities for making the system better.

III. ISSUES IN TRANSITION

Moving forward, there are some issues that merit further investigation and remedy.

*Ongoing corrections for official certification option:* Utilization of this software application as a vehicle for official data submission was the initial goal of this software application, and remains the ultimate objective for the agencies involved in the project. That said, the DLGF and LSA are working with the IBRC to rectify some of the outstanding issues with the upload software application before all parties are comfortable with taking the official submission feature live. Based upon user reviews and acceptance by the counties, however, it appears that the system is providing a great amount of utility, as was envisioned.

*System documentation:* Just as with LSA, thorough and useful documentation has become a priority to the Department. The Department and the IBRC are working on creating master documentation of the system that will provide stakeholders with a relevant map of the system and its operation so that future staff can clearly understand the system. In addition, a backup copy of the software is being developed in the event of a major disruption to the system, be it a disaster, a change in relationship between the agencies, or any other qualifying event that would be problematic for users.

*Upgrades to the upload software application:* Automating the criteria for determining adherence to standards, content, and analytical review has underscored the inadequacies of the manual and semi-automated processes previously used. To mitigate the possibility of limiting future changes necessary to add, change, or remove criteria, IBRC has developed a program that has a database as the home for the functions used in the form of algorithms used to generate reporting output. Should DLGF or LSA determine that a certain function needs modification, an authorized user can make these changes in a database table which, when implemented in production, would affect the next round of report results generated. As data submissions standards and/or evaluation criteria changes and expands, DLGF and LSA can more easily keep pace with these changes using the IBRC upload toolset.
IV. APPENDICES

**Appendix A:** Presentation entitled *HEA 1001 (2008) Report to Legislative Council*

**Appendix B:** Preliminary Final Analysis Report

**Appendix C:** (SAMPLE) File Summary Report for Sample County

**Appendix D:** (SAMPLE) Example of Detail Report by Record (single page of 1561-page report)

**Appendix E:** (SAMPLE) Example of Detail Report by Record (a sampling of 20 records of those that could not be updated)
HEA 1001 (2008) Report to the Legislative Council

Cheryl Musgrave
Commissioner
June 30, 2008

Appendix A
Making Progress

Appendix A
Benefits

- Best alternative to a statewide system
- More consistent and faster processing of data allows more accurate data to be more readily accessible, supporting better decision making
- Frees staff commitment from rote review of data submissions to ad hoc and customized analysis
Benefits

- Conveniently available 24/7
- Reports generated are automated and can be accessed 24/7
- Processes are consistently applied to all datasets
- Reports provide detail deficiencies by record for county review/correction
- Assessor data can be tested prior to rollover to Auditor in timely manner

Appendix A
Benefits

- Detail data deficiencies provided to Counties that have never been provided before
- Data anomalies are more easily identified
- Systemic problems are identified
- County provided targeted information by record for correcting errors
- State acquires cleaner, more consistent, more useable data
- State will have the ability to develop ad hoc queries and reports
- State will have the ability to develop additional online tools using the data repository
Annual County File Submissions that Require Certification

- 92 Counties = 368 datasets = 1012 individual files for 1 year
  - Assessor Data (Parcel Level / 552 files)
  - Personal Property Data (Return Level / 184 files)
  - Sales Disclosure Data (Form Level / 92 files)
  - Auditor Data (Tax bill Level / 184 files)

Appendix A
County Submissions Via Test Mode

Personal Property File

Real Property File

Sales Disclosure File

Tax Billing File

Upload Via Online Tool

Specification Discrepancy Reports

Content Discrepancy Reports

In Final Review

BASIC REPORTS

ENHANCED REPORTS

Analysis Reports

Data Certification Notice

Official Submission (to LSA)

Specifications Correct?

N

Y

Content Correct?

N

Y

Corrections Made

Assessor Tasks

Auditor Tasks

State Tasks

Appendix A

DLGF – supplied queries – in final review
LSA – Supplied queries – under development by IBRC

Appendix A
Test Submissions - County

- Test submissions are provided to help counties identify deficiencies in data submissions.
- Counties may test their files as often as required to find data anomalies for correction, prior to official submission.
- Counties may submit individual files in test mode:
  - When doing so only reports specific to that file are valid.
  - Reports that require verification between multiple files will be generated based on data available in the test space as of the upload session.

Appendix A
County Submissions
Via Official Mode
(under development)

Files Correct & Final?

FILES WITHIN SET TOLERANCES

DLGF / LSA Staff Final Check

Data Certification Notice

FILES REJECTED!

Personal Property File

Real Property File

Sales Disclosure File

Tax Billing File

Testing/Corrections Complete

Upload Via Online Tool

Specification Discrepancy Reports

Content Discrepancy Reports

In Final Review

BASIC REPORTS

ENHANCED REPORTS

DLGF – supplied queries – in final review
LSA – Supplied queries – under development by IBRC

Analysis Reports

Appendix A
County Use of Upload Test

In the 4 months the test tool has been available to the counties:

– 48 counties have tried to upload 426 data files in test mode
– 31 counties have loaded a specific file more than once
– 29 counties have loaded more than 1 type of file
– Approximately 271 reports have been produced for counties
– 1 2006 pay 2007 file was uploaded; 385 2007 pay 2008 files were uploaded; and 40 2008 pay 2009 files were uploaded by counties

Appendix A
County Uploads by File Type

Appendix A
State Use of Upload Test

In the 4 months the test tool has been available to the state:

- 1580 files have been uploaded by DLGF
- 83 files have been uploaded by IBRC (system testing)
- 24 files have been uploaded by LSA (system testing)
- Approximately 1257 reports have been produced for DLGF
- 323 2005 pay 2006 files were uploaded; 889 2006 pay 2007 files were uploaded; 364 2007 pay 2008 files were uploaded; and 4 2008 pay 2009 files were uploaded by DLGF

Appendix A
Official Submissions - County
(under development)

- *Official* submissions are considered final deliveries by counties to the state
- *Official* submissions are used to determine compliance with state specifications
- Counties may submit *official* files once, unless otherwise determined by the state
- *Official* files are used for evaluation and analysis by the state

Appendix A
Upload Login

- The Property Data Upload Application is an Internet web based tool.
- Tool requires a secure user login – each county auditor and assessor has been issued a secure login.

Appendix A
Select Data

- Once logged in the county official selects year, dataset, and dataset sub-item to be uploaded
- All files must be zipped and are uploaded via secure encryption
Upload Data

- Files already loaded will be listed with status information about submissions.
- User browses to location of zip files to upload in test mode.
- Official submission is currently unavailable to Counties.

Appendix A
Notification of Receipt

• Counties receive notice of receipt via e-mail

• Preliminary report of submission is provided based on header of file submitted

Appendix A
Report Content

- Reports are generated that provide information to county about problems found.
- **Summary** reports provide statistics and chart of deficiencies.
- **Detail** reports give detail of deficiencies per record.

Appendix A
Report Access

- Report results can be viewed online or downloaded by the county
- Both summary and detail reports for test submissions are provided to the county
Impact of Reports

• Counties receive enough detail for deficiencies in a timely manner to achieve corrections prior to *official* submissions
• County corrections in file submissions means the state acquires more accurate information
• More consistent and faster processing of data allows more accurate data to be more readily accessible, supporting better decision making
• Automated processing frees staff to be reallocated to ad hoc and customized analysis

Appendix A
Basic Reports

- Verification of file essentials will be conducted immediately after upload
- Notification is sent directly to officeholders responsible for submission
- Tool tests for compliance with established format specifications contained within the published Data Standards
- Tool also tests for obvious errors found in the content of the submitted file, such as verification of codes or alpha characters in numeric fields
Enhanced Reporting  
(under development)

- Verification and cross-file analysis of files  
- Detailed feedback on the compliance and content of the files submitted is provided in a comprehensive detailed record report for use by county officials and state analysts  
- Cross-file analysis queries that support certification are automated and in final review for DLGF-supplied queries and under development for LSA-supplied queries.  
- Enhanced summary reports provide overview of cross-file errata found to help identify systemic errors and data anomalies

Appendix A
Access to Reports

- E-mail notifications are sent to officeholders responsible for submission upon completion of basic summary and detail reports.
- E-mail notifications are sent to officeholders responsible for submission in the event submitted files have been rejected by the upload tool.
- Reports are also stored on the application server in a county specific subdirectory, accessible via a secure web access account.

Appendix A
Secure Access to Tool

• County assessors and county auditors are provided a login and password to access the Property Data Upload Application
• County officials are granted access to view the resulting reports for their county only
• Reports are accessible via the secure web access account
• These reports can be downloaded and used by county staff and/or contracted vendors to correct any deficiencies found in the file submissions
Data Upload Processes

Upload Via Online Tool

- Specification Discrepancy Reports
- Content Discrepancy Reports

In Final Review

- Analysis Reports
- DLGF – supplied queries – in final review
- LSA – Supplied queries – under development by IBRC

In Development

- Web Server
- Data to Repository

BASIC REPORTS

- Test Submission
- Official Submission

User LOGIN

- Test or Official?

Upload Via Online Tool

- Specification Discrepancy Reports
- Content Discrepancy Reports

Discrepancy Reports

- Analysis Reports

ENHANCED REPORTS

- Sales Disclosure
- Appeals Submission

Other Applications

- Ad Hoc Reports
- Data Status Reports

Auditor Tasks

- Assessor Tasks

State Tasks

Appendix A

* Non-compliance with data specifications and/or content requirements will result in rejection of official submissions.
Two Methods for Uploading Files

- **Testing Files**
  - Users can upload and run data files through the standardized verification and quality control checks to determine what, if anything, that may need reviewed and/or corrected prior to officially submitting the files.
  - Counties are strongly encouraged to make use of the testing mode so that any problems can be corrected prior to official submission.
  - The testing mode can be used as many times as necessary to assure the quality and accuracy of the content of the files prior to official submission.

Appendix A
Two Methods for Uploading Files

• Submitting *Official Files* (currently under construction)
  – The *official* files are those used by the State to determine certification status
  – After testing files and verifying the accuracy of the content, the goal is to use those files uploaded as the *official* file submissions to the State
  – Counties will be able to submit complete datasets (i.e., both TAXDATA.TXT and ADJMENTS.TXT comprise a dataset), for a one-time submission, unless otherwise determined by the state
  – All files should have been reviewed by the county after submission via *test* mode to assure accuracy of the content of the files prior to *official* submission

Appendix A
Preliminary File Analysis

County: SAMPLE
Year: 2007 pay 2008
Dataset: Real Property
Subitem: PARCEL
Status: Test Submission on 6/20/2008 5:06:52 PM

1. Header Field Name Check

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<thead>
<tr>
<th>Header Field Name</th>
<th>Status</th>
<th>Value in File</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filename:</td>
<td>✅</td>
<td>FileName:<em>PARCEL</em>_</td>
</tr>
<tr>
<td>County Number:</td>
<td>✅</td>
<td>County_Number:</td>
</tr>
<tr>
<td>County Description:</td>
<td>✅</td>
<td>County_Description: Sample__County__</td>
</tr>
<tr>
<td>LCM:</td>
<td>✅</td>
<td>LCM:0.96_</td>
</tr>
<tr>
<td>File Format ID:</td>
<td>✅</td>
<td>File_Format_ID: _2003A</td>
</tr>
<tr>
<td>County Contact Name:</td>
<td>✅</td>
<td>County_Contact_Name:</td>
</tr>
<tr>
<td>County Contact Phone:</td>
<td>✅</td>
<td>County_Contact_Phone:</td>
</tr>
<tr>
<td>File Create Date:</td>
<td>✅</td>
<td>File_Create_Date:01/16/2008___</td>
</tr>
<tr>
<td>File Create Time:</td>
<td>✅</td>
<td>File_Create_Time:1359_</td>
</tr>
<tr>
<td>Assessment Year:</td>
<td>✅</td>
<td>Assessment_Year:2007_</td>
</tr>
<tr>
<td>Pay Year:</td>
<td>✅</td>
<td>Pay_Year:2008_</td>
</tr>
<tr>
<td>Software Vendor Name:</td>
<td>✅</td>
<td>Software_Vendor_Name:Manatron__________</td>
</tr>
<tr>
<td>Software Package Name and Version:</td>
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<td>Software_Package_Name:ProVal______________________________</td>
</tr>
<tr>
<td>Software Vendor Phone Number:</td>
<td>❌</td>
<td>Software_Vendor_Phone:317-802-0758__________________</td>
</tr>
<tr>
<td>Software Vendor:</td>
<td>✅</td>
<td>Software_Vendor_Email:<a href="mailto:ProVal.Support@Manatron.co">ProVal.Support@Manatron.co</a></td>
</tr>
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</table>
2. Header Field Check

<table>
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<th>Field Name</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Pay Year</td>
<td>2008</td>
<td>✔️</td>
<td>2008</td>
</tr>
<tr>
<td>County Number</td>
<td>93</td>
<td>✔️</td>
<td>93</td>
</tr>
<tr>
<td>County Name</td>
<td>Sample county</td>
<td>✔️</td>
<td>Sample county</td>
</tr>
</tbody>
</table>
The Green section represent records that are in compliance based on all available checks. The other colors represent records we could find that are in error. Some records may not have been loaded in our database for review. These unlocal records are represented by a gray section on the graph.

Summary by Check

<table>
<thead>
<tr>
<th>Check Name</th>
<th>Error Count</th>
<th>Percent of all Records</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count of records with a vacant property class code.</td>
<td>207</td>
<td>0.25%</td>
</tr>
<tr>
<td>Count of records with an invalid format for: Alley</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Count of records with an invalid format for: Appraisal Date</td>
<td>81,333</td>
<td>100.00%</td>
</tr>
<tr>
<td>Count of records with an invalid format for: Date Transferred to Current Owner</td>
<td>81,333</td>
<td>100.00%</td>
</tr>
<tr>
<td>Count of records with an invalid format for: District Number</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Count of records with an invalid format for: Electricity</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Count of records with an invalid format for: Flood Hazard</td>
<td>81,333</td>
<td>100.00%</td>
</tr>
<tr>
<td>Count of records with an invalid format for: Gas</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Count of records with an invalid format for: GIS Parcel Number</td>
<td>380</td>
<td>0.47%</td>
</tr>
<tr>
<td>Count of records with an invalid format for: High</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Count of records with an invalid format for: Level</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Count of records with an invalid format for: Low</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Count of records with an invalid format for: Owner Address Zip Code</td>
<td>159</td>
<td>0.20%</td>
</tr>
<tr>
<td>Count of records with an invalid format for: Parcel Number</td>
<td>81,333</td>
<td>100.00%</td>
</tr>
<tr>
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<td>33</td>
<td>0.04%</td>
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<td>0.00%</td>
</tr>
<tr>
<td>Count of records with an invalid format for:</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>-----------</td>
<td></td>
</tr>
<tr>
<td>Count of records with an invalid format for: Sewer</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Count of records with an invalid format for: Sidewalk</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Count of records with an invalid format for: State Assigned District Number</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Count of records with an invalid format for: State Township Number</td>
<td>81,333 100.00%</td>
<td></td>
</tr>
<tr>
<td>Count of records with an invalid format for: Swampy</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Count of records with an invalid format for: Water</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Count of records with improvement components that don't sum to total.</td>
<td>9 0.01%</td>
<td></td>
</tr>
<tr>
<td>Count of records with invalid district code.</td>
<td>3 0.00%</td>
<td></td>
</tr>
<tr>
<td>Count of records with invalid neighborhood type code.</td>
<td>13,551 16.66%</td>
<td></td>
</tr>
<tr>
<td>Count of records with invalid property class codes.</td>
<td>1 0.00%</td>
<td></td>
</tr>
<tr>
<td>Count of records with invalid reason for change code.</td>
<td>81,332 100.00%</td>
<td></td>
</tr>
<tr>
<td>Count of records with invalid street or road codes.</td>
<td>13,168 16.19%</td>
<td></td>
</tr>
<tr>
<td>Count of records with land and improvements components that don't sum to total.</td>
<td>1 0.00%</td>
<td></td>
</tr>
<tr>
<td>Count of records with land components that don't sum to total.</td>
<td>53 0.07%</td>
<td></td>
</tr>
<tr>
<td>Count of records with non-residential land and improvements components that don't sum to total.</td>
<td>0 0.00%</td>
<td></td>
</tr>
<tr>
<td>Count of records with residential land and improvements components that don't sum to total.</td>
<td>4 0.00%</td>
<td></td>
</tr>
</tbody>
</table>

Note: Details of these errors can be viewed in 2 separate files (detail_a.csv & detail_b.csv).
In cases where an error occurs in ALL records a sample of 20 values in error is listed in detail_b.csv.
In cases where an error occurs only in SOME of the records, all of those errors are shown in detail_a.csv.

Indiana Department of Local Government Finance
100 North Senate Ave., Room N1058
Indianapolis, IN 46204
E-mail

Last Updated: 6/20/2008 7:57:39 PM
<table>
<thead>
<tr>
<th>Error Code</th>
<th>Error Description</th>
<th>Field Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>10003</td>
<td>Invalid reason for change code.</td>
<td>54</td>
</tr>
<tr>
<td>10002</td>
<td>Invalid neighborhood type code.</td>
<td>N</td>
</tr>
<tr>
<td>10003</td>
<td>Invalid reason for change code.</td>
<td>54</td>
</tr>
<tr>
<td>10001</td>
<td>Invalid street or road code.</td>
<td></td>
</tr>
<tr>
<td>10002</td>
<td>Invalid neighborhood type code.</td>
<td>N</td>
</tr>
<tr>
<td>10003</td>
<td>Invalid reason for change code.</td>
<td>54</td>
</tr>
<tr>
<td>10001</td>
<td>Invalid street or road code.</td>
<td></td>
</tr>
<tr>
<td>10009</td>
<td>Farmland greater than non-residential land total.</td>
<td>-20</td>
</tr>
<tr>
<td>10003</td>
<td>Invalid reason for change code.</td>
<td>54</td>
</tr>
<tr>
<td>10003</td>
<td>Invalid reason for change code.</td>
<td>54</td>
</tr>
<tr>
<td>10003</td>
<td>Invalid reason for change code.</td>
<td>54</td>
</tr>
<tr>
<td>10009</td>
<td>Farmland greater than non-residential land total.</td>
<td>-10</td>
</tr>
<tr>
<td>10003</td>
<td>Invalid reason for change code.</td>
<td>54</td>
</tr>
<tr>
<td>10009</td>
<td>Farmland greater than non-residential land total.</td>
<td>-20</td>
</tr>
<tr>
<td>10003</td>
<td>Invalid reason for change code.</td>
<td>54</td>
</tr>
<tr>
<td>10003</td>
<td>Invalid reason for change code.</td>
<td>54</td>
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<tr>
<td>10003</td>
<td>Invalid reason for change code.</td>
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<tr>
<td>10003</td>
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</tr>
<tr>
<td>10009</td>
<td>Farmland greater than non-residential land total.</td>
<td>-10</td>
</tr>
<tr>
<td>10003</td>
<td>Invalid reason for change code.</td>
<td>54</td>
</tr>
<tr>
<td>10009</td>
<td>Farmland greater than non-residential land total.</td>
<td>-30</td>
</tr>
<tr>
<td>10003</td>
<td>Invalid reason for change code.</td>
<td>54</td>
</tr>
<tr>
<td>10009</td>
<td>Farmland greater than non-residential land total.</td>
<td>-30</td>
</tr>
<tr>
<td>10003</td>
<td>Invalid reason for change code.</td>
<td>54</td>
</tr>
<tr>
<td>10009</td>
<td>Farmland greater than non-residential land total.</td>
<td>-10</td>
</tr>
<tr>
<td>10003</td>
<td>Invalid reason for change code.</td>
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<td>-40</td>
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<tr>
<td>10003</td>
<td>Invalid reason for change code.</td>
<td>54</td>
</tr>
<tr>
<td>10003</td>
<td>Invalid reason for change code.</td>
<td>54</td>
</tr>
<tr>
<td>10002</td>
<td>Invalid neighborhood type code.</td>
<td>N</td>
</tr>
<tr>
<td>10003</td>
<td>Invalid reason for change code.</td>
<td>54</td>
</tr>
</tbody>
</table>

Appendix D
<table>
<thead>
<tr>
<th><em>(gis parcel number)</em></th>
<th><em>(parcel number)</em></th>
<th>Error Code</th>
<th>Error Description</th>
<th>Field Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>**</td>
<td><em>01-010-01-006-022</em></td>
<td>71</td>
<td>Appraisal Date Format</td>
<td>Dec 30 1899 12:00AM</td>
</tr>
<tr>
<td>**</td>
<td><em>01-010-01-006-022</em></td>
<td>36</td>
<td>Date Transferred to Current Owner Format</td>
<td>Jan 26 2007 12:00AM</td>
</tr>
<tr>
<td>**</td>
<td><em>01-010-01-006-022</em></td>
<td>52</td>
<td>Flood Hazard Format</td>
<td></td>
</tr>
<tr>
<td>**</td>
<td><em>01-010-01-006-022</em></td>
<td>17</td>
<td>Parcel Number Format</td>
<td>01-010-01-006-022</td>
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<tr>
<td>**</td>
<td><em>01-010-01-006-022</em></td>
<td>19</td>
<td>State Township Number Format</td>
<td>1</td>
</tr>
<tr>
<td>**</td>
<td><em>01-010-01-014-016</em></td>
<td>71</td>
<td>Appraisal Date Format</td>
<td>Dec 30 1899 12:00AM</td>
</tr>
<tr>
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<td><em>01-010-01-014-016</em></td>
<td>36</td>
<td>Date Transferred to Current Owner Format</td>
<td>Mar 22 2006 12:00AM</td>
</tr>
<tr>
<td>**</td>
<td><em>01-010-01-014-016</em></td>
<td>52</td>
<td>Flood Hazard Format</td>
<td></td>
</tr>
<tr>
<td>**</td>
<td><em>01-010-01-014-016</em></td>
<td>17</td>
<td>Parcel Number Format</td>
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</tr>
<tr>
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<td><em>01-010-01-014-016</em></td>
<td>19</td>
<td>State Township Number Format</td>
<td>1</td>
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<tr>
<td>**</td>
<td><em>01-010-01-014-017</em></td>
<td>71</td>
<td>Appraisal Date Format</td>
<td>Dec 30 1899 12:00AM</td>
</tr>
<tr>
<td>**</td>
<td><em>01-010-01-014-017</em></td>
<td>36</td>
<td>Date Transferred to Current Owner Format</td>
<td>Mar 22 2006 12:00AM</td>
</tr>
<tr>
<td>**</td>
<td><em>01-010-01-014-017</em></td>
<td>52</td>
<td>Flood Hazard Format</td>
<td></td>
</tr>
<tr>
<td>**</td>
<td><em>01-010-01-014-017</em></td>
<td>17</td>
<td>Parcel Number Format</td>
<td>01-010-01-014-017</td>
</tr>
<tr>
<td>**</td>
<td><em>01-010-01-014-017</em></td>
<td>19</td>
<td>State Township Number Format</td>
<td>1</td>
</tr>
<tr>
<td>**</td>
<td><em>01-010-01-034-012</em></td>
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<td>17</td>
<td>Parcel Number Format</td>
<td>01-010-01-034-012</td>
</tr>
<tr>
<td>**</td>
<td><em>01-010-01-034-012</em></td>
<td>19</td>
<td>State Township Number Format</td>
<td>1</td>
</tr>
</tbody>
</table>