Grade Crossing Inventory System (GCIS)

Training Slides - Advanced

2016

Agenda

- File Uploads
- APIs (Public & Secure)
- Useful Reference Information
- Q&A Session

File Upload (1 of 2)

- Allows users the ability to add/update multiple crossings at once.
- State users will utilize state template; railroad users the railroad template(s).
- The submission MUST be in the template and MUST be uploaded within GCIS (no emailed files).
- Users can download their agency's crossing data from the File Upload > Downloads menu. This file can be used to upload crossing data.
- Follow the Electronic Submission Instructions for submitting the appropriate fields.
- The template allows users to enter data that cannot be entered on the online form.
  - In other words, the business rule validations are not built into the spreadsheet.
  - As mentioned previously, the system will validate any data that is included in this submission.

File Upload (2 of 2)

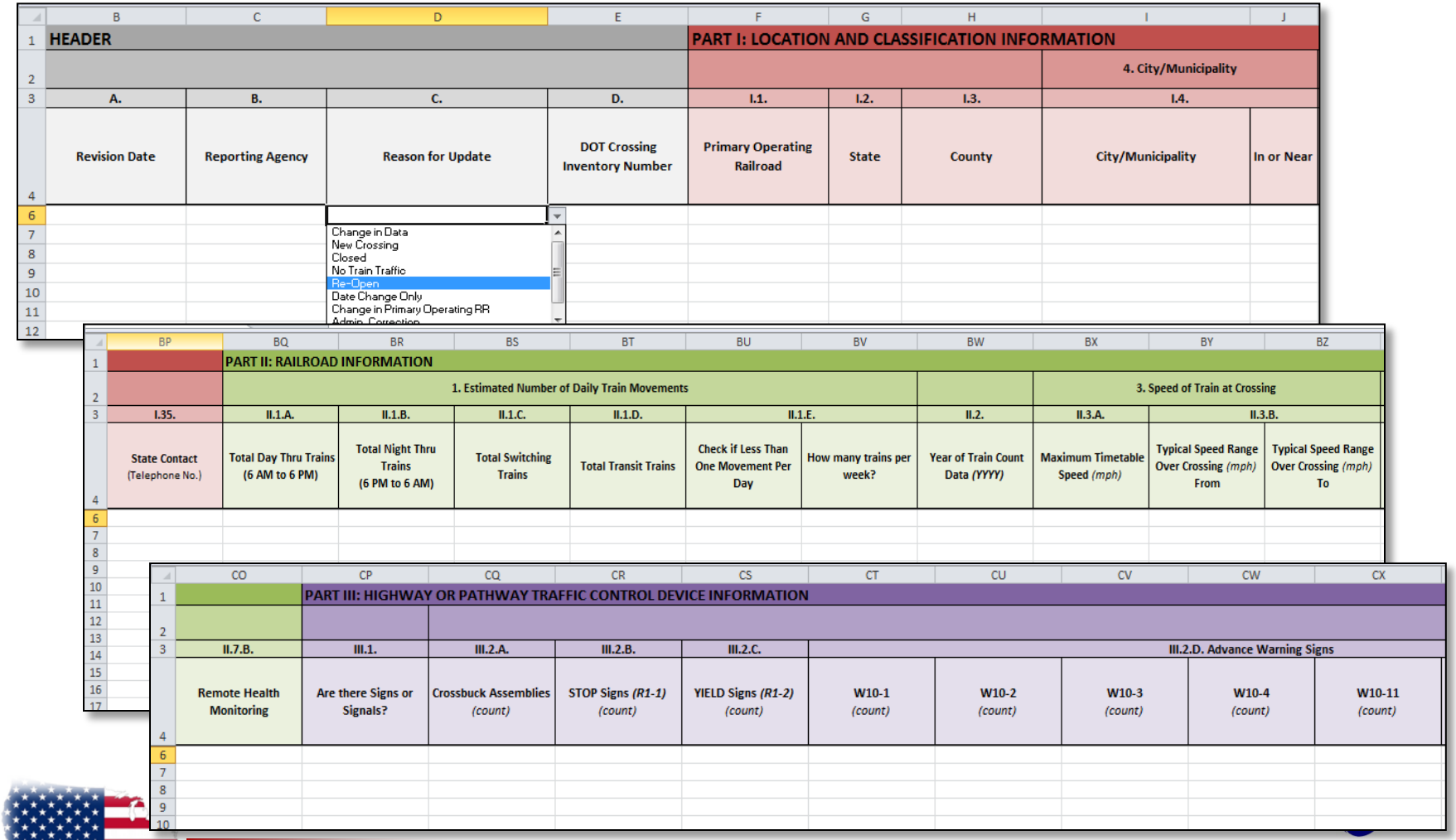
File Upload – Templates (1 of 3)

- Two templates for Railroad users.
  - Full Inventory
  - Train Count
- One template for State users

File Upload – Templates (2 of 3)

- Excel file divided into 6 color-coded sections, correlating to Parts I-V.
- Fields with a predetermined list of values have selections available. For example, B. Reporting Agency will allow selection of Railroad or Transit (Railroad template)
- Some fields have validations enforced within Excel
- Fields marked with an asterisk (*) are optional fields
- Certain fields (I.7-I.12) are not available to State users and don't appear in the State template.
- When saving, recommend using these naming conventions:
  - Railroad File: GXRR_RAILROADCODE_MMDDYYYY.XLSX
  - State File: GXST_STATEABBREVIATION_MMDDYYYY.XLSX

File Upload – Templates (3 of 3)



	B	C	D	E	F	G	H	I	J
1	HEADER				PART I: LOCATION AND CLASSIFICATION INFORMATION				
2								4. City/Municipality	
3	A.	B.	C.	D.	I.1.	I.2.	I.3.	I.4.	
4	Revision Date	Reporting Agency	Reason for Update	DOT Crossing Inventory Number	Primary Operating Railroad	State	County	City/Municipality	In or Near
6									

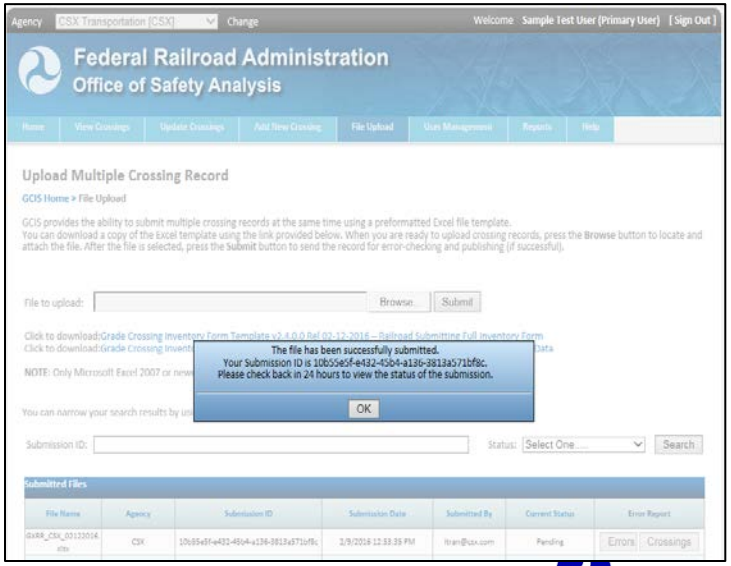
Change in Data
New Crossing
Closed
No Train Traffic
Re-Open
Date Change Only
Change in Primary Operating RR
Admin. Correction

	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ
1		PART II: RAILROAD INFORMATION									
2		1. Estimated Number of Daily Train Movements							3. Speed of Train at Crossing		
3	I.35.	II.1.A.	II.1.B.	II.1.C.	II.1.D.	II.1.E.		II.2.	II.3.A.	II.3.B.	
4	State Contact (Telephone No.)	Total Day Thru Trains (6 AM to 6 PM)	Total Night Thru Trains (6 PM to 6 AM)	Total Switching Trains	Total Transit Trains	Check if Less Than One Movement Per Day	How many trains per week?	Year of Train Count Data *(YYYY)*	Maximum Timetable Speed *(mph)*	Typical Speed Range Over Crossing *(mph)* From	Typical Speed Range Over Crossing *(mph)* To
6											

	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX
1		PART III: HIGHWAY OR PATHWAY TRAFFIC CONTROL DEVICE INFORMATION								
2										
3	II.7.B.	III.1.	III.2.A.	III.2.B.	III.2.C.	III.2.D. Advance Warning Signs				
4	Remote Health Monitoring	Are there Signs or Signals?	Crossbuck Assemblies *(count)*	STOP Signs *(R1-1)* *(count)*	YIELD Signs *(R1-2)* *(count)*	W10-1 *(count)*	W10-2 *(count)*	W10-3 *(count)*	W10-4 *(count)*	W10-11 *(count)*
6										

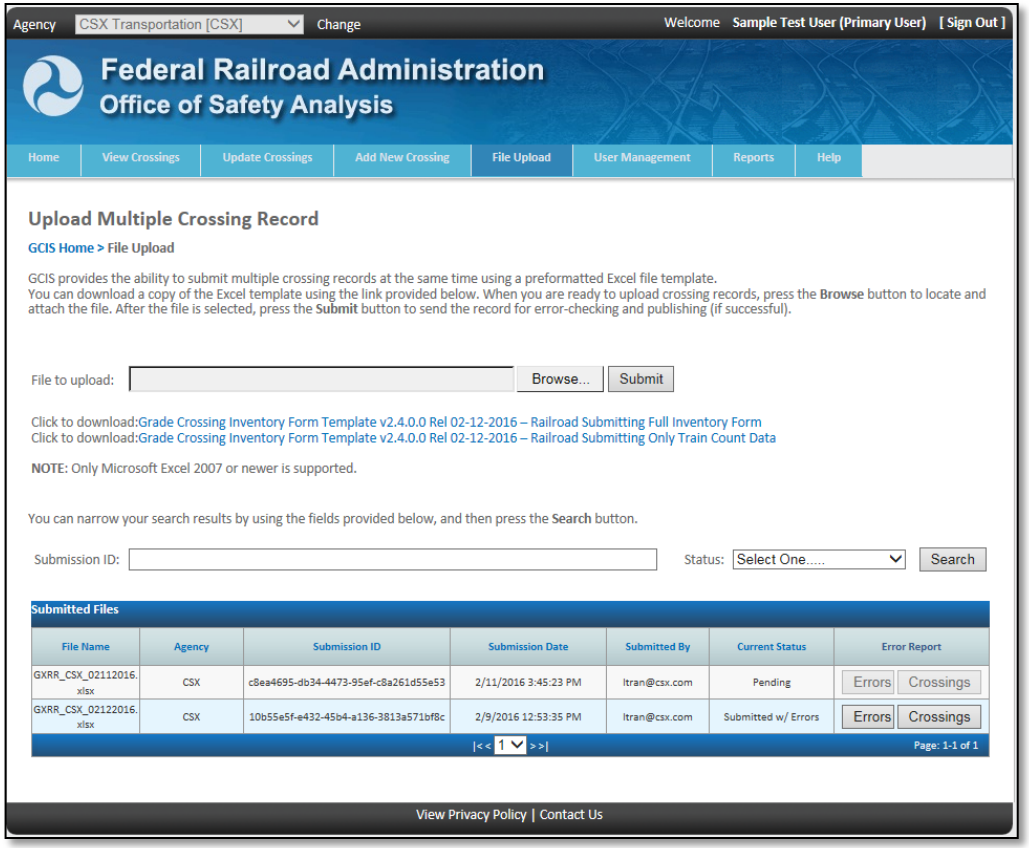
File Upload - Uploading

- Click **Browse** button to find file and attach
- Click **Submit**
- Press **OK** to confirm
- Submitted file(s) will show status of **Pending**
- Confirmation email will be sent containing Submission ID for reference



File Upload – Submission Status

- Once a file is processed, the system will update the status from **Pending** to either **Successfully Submitted** or **Submitted w/ Errors**

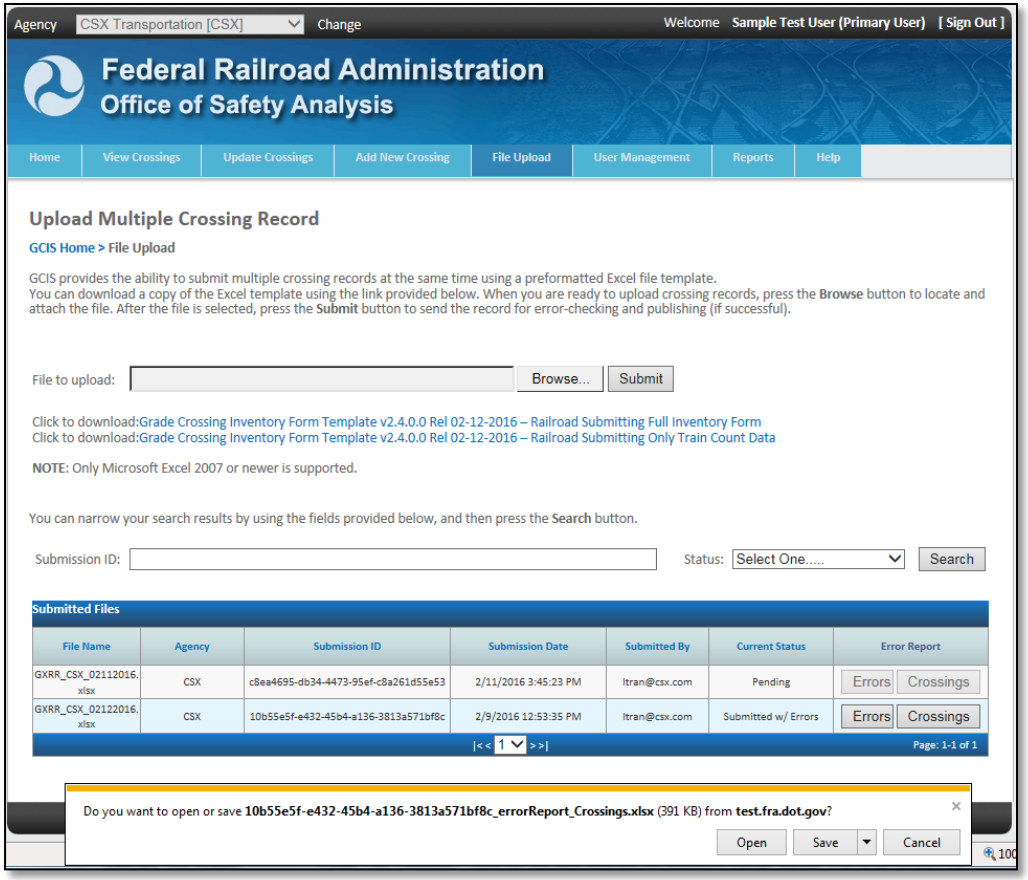


File Upload – Errors Report

- Click **Errors** button to download file containing a list of error codes, error descriptions, and the Crossing Number associated with the error

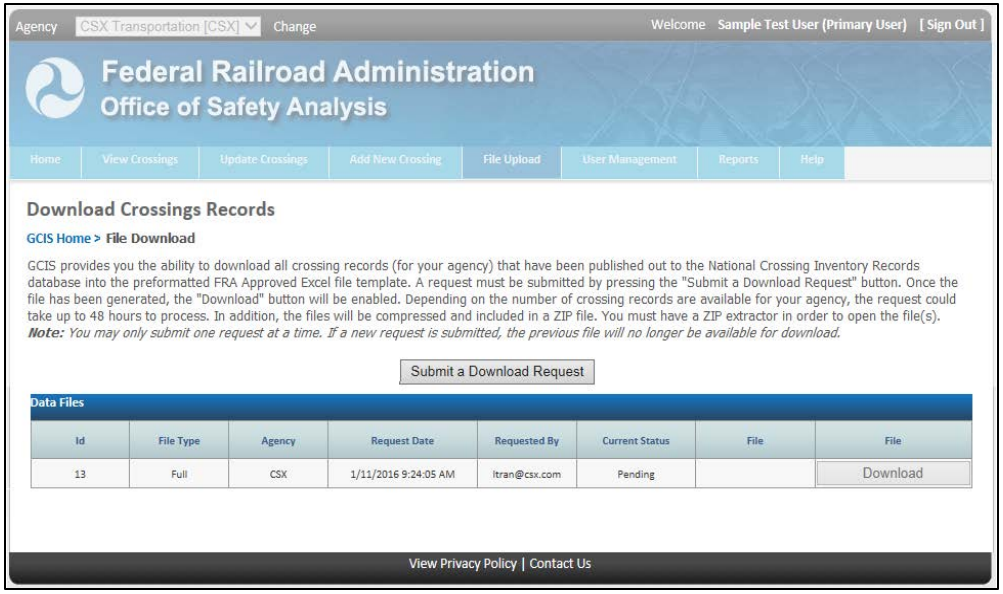
File Upload – Crossing Report

- Click **Crossings** button to download file containing only the crossing data for which there were errors.



File Download

- Download full inventory of your crossings.
- Located under **Downloads** sub-menu within **File Upload** tab
- Click **Submit a Download Request** button
- File will be available within 24-48 hours in ZIP format



Note: Uploads are limited to 3MB

File Upload/Download

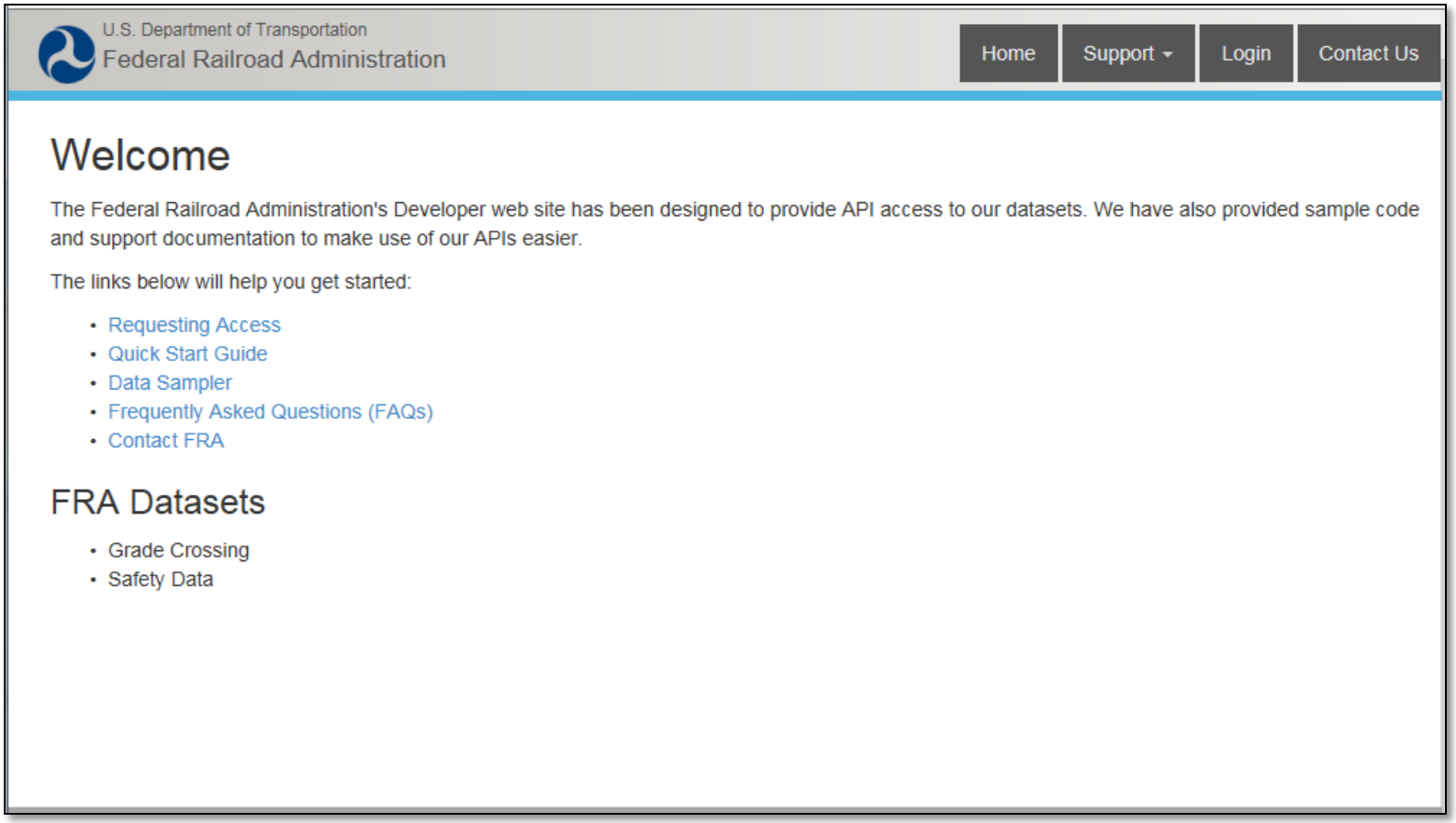
Let’s take a look!

https://stage.fra.dot.gov/gcis/

APIs (1 of 3)

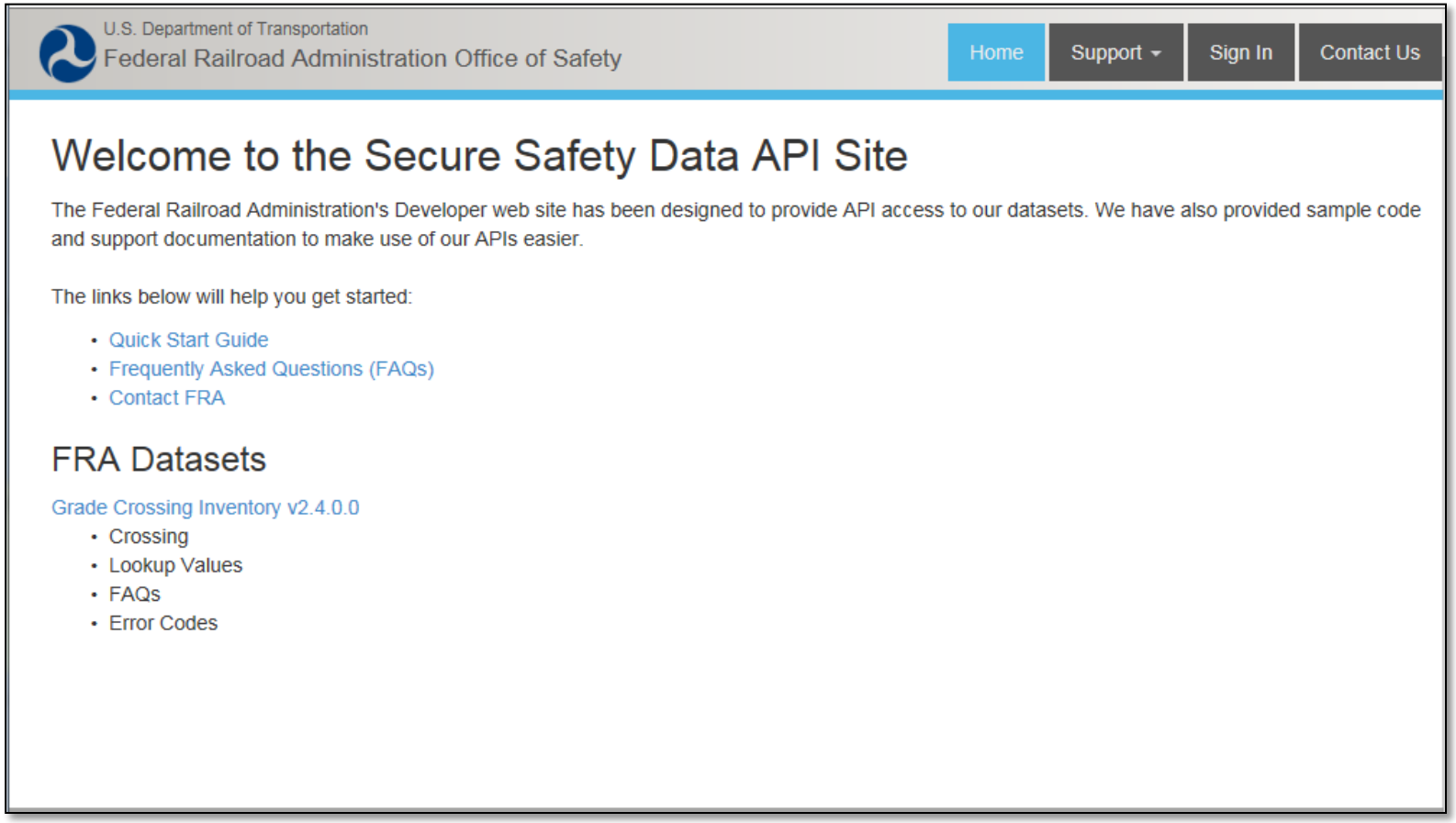
- Consists of a Public and a Secure API site
  - Public API
    - Provides sample code and support documentation to make use of FRA's APIs
    - All users can query published crossing records using the Data Sampler page in real-time
  - Secure API
    - Along with the capabilities of the Public API, this site provides authenticated users the ability to retrieve (GET) and submit (POST, PUT, PATCH) multiple crossing records simultaneously using a Secure Web Service utilizing oData
    - Authenticated users can access crossing records specifically for their agency
    - Contains information on how to request different types of datasets
    - This feature is advanced and requires developer expertise
- Technical support will work with users but will not design your system for you

APIs (2 of 3)



Public API: https://safetydata.fra.dot.gov/MasterWebService/publicapi

APIs (3 of 3)



Secure API: https://safetydata.fra.dot.gov/MasterWebService/SecureAPI/

Secure API (1 of 5)

- GET request
  - Get Crossing by Railroad

https://safetydata.fra.dot.gov/MasterWebService/SecureAPI/GCIS/v1/odata/Crossings?$filter=OperatingRailroadCode eq 'CSX'&token=<*token_key*>

  - Get Crossing by State

https://safetydata.fra.dot.gov/MasterWebService/SecureAPI/GCIS/v1/odata/Crossings?$filter=StateCd eq 30&token=<*token_key*>

  - Get a Specific Crossing Record

https://safetydata.fra.dot.gov/MasterWebService/SecureAPI/GCIS/v1/odata/Crossings?$filter=CrossingId eq '016530M'&token=<*token_key*>

  - Get all Public Crossings

https://safetydata.fra.dot.gov/MasterWebService/SecureAPI/GCIS/v1/odata/Crossings?$filter=TypeXing+eq+'2'&token=<token_key>

Secure API (2 of 5)

- POST, PUT, PATCH request
  - All submission requests must contain the following required fields:
    - Type of Submission — ReportType
    - C. Reason for Update — ReasonId
    - D. Crossing Number — CrossingId
    - I.1 Primary Operating Railroad — Railroad
    - I.2 State — StateCD
    - I.3 County — CntyCD
    - I.4 City — CityCD
  - Delta submissions are acceptable

Secure API (3 of 5)

- Sample GET Request: Crossing # 151005A

```
GET /MasterWebService/SecureAPI/gcis/v1/odata/Crossings?token=617f7194-458f-4b57-b05d-ccf36cce3375&$filter=CrossingId eq '151005A' HTTP/1.1
Host: test.fra.dot.gov
Cache-Control: no-cache
Postman-Token: 06944d97-a2b1-6366-c696-73ccc04afba7
{
 "odata.metadata": "https://test.fra.dot.gov/MasterWebService/SecureAPI/GCIS/v1/odata/$metadata#Crossings",
 "value": [
  {
   "ReportBaseId": 3108544,
   "SubmissionId": "701730AB-0E1A-4308-96CB-B64D98845C27",
   "ReportStatus": "Published",
   "HasErrors": "False",
   "ReportingAgencyTypeID": 1,
   "ReportingAgencyID": 542,
   "ReasonId": 14,
   "CrossingId": "151005A",
   "RevisionDate": "2016-02-17T00:00:00",
   "ReportType": "Full Inventory Record ",
   "Railroad": "CSX",
   "StateCD": "39",
   "CntyCD": "39167",
    ...
   "RrMain": "-1",
   "XingOwnr": "CSX",
    ...
  }
 ]
}
```

Secure API (4 of 5)

- Sample POST Request: Crossing # 151005A

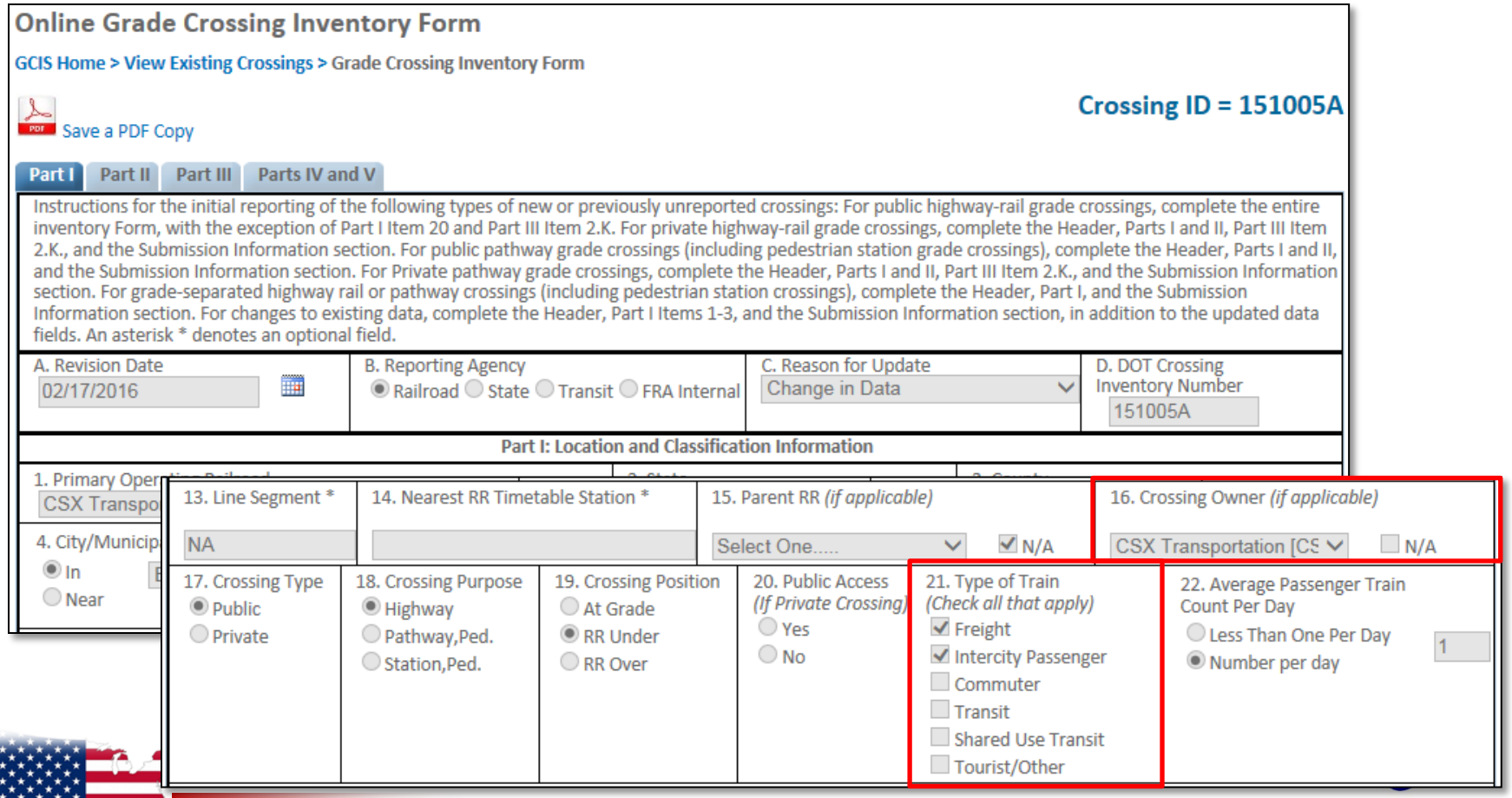
Updating Crossing Owner (I.16) & Type of Train (I.21)

```
POST /MasterWebService/SecureAPI/gcis/v1/odata/Crossings?token=617f7194-458f-4b57-b05d-ccf36cce3375 HTTP/1.1
Host: test.fra.dot.gov
Content-Type: application/json
Cache-Control: no-cache
Postman-Token: 76b32f56-fb9c-d20d-14ce-7e4e9f3d3cf5
{
        "ReasonId": 14,
        "CrossingId": "151005A",
         "ReportType": "Full Inventory Record ",
        "Railroad": "CSX",
        "StateCD": "39",
        "CntyCD": "39167",
        "Nearest": "0",
         "CityCD": "391670680",
         "XingOwnr": "CSX",
        "TypeTrnSrvcIDs": "11,12“
}

HTTP/1.1 200 OK
{"SubmissionID":"6bfecdec-6a78-4c19-a760-4cb2002d9cfa","Message":"Success","HasError":false,"Processed":true}
```

Secure API (5 of 5)

- Sample POST Request: Crossing # 151005A



APIs - Staging

Public API:
https://stage.fra.dot.gov/masterWebService/publicapi

Secure API:
https://stage.fra.dot.gov/masterWebService/SecureAPI/

FRA Points of Contacts

- Policy, Procedures, and Guidance
  - Ron Ries - Staff Director
    ronald.ries@dot.gov
  - JoAnn Scott - Program Analyst
    joann.scott@dot.gov
  - Kathryn Gresham - Trial Attorney
    kathryn.gresham@dot.gov
- Technical Issues with Electronic System
  - GCIS Technical Support Desk (See Next Slide)
  - Kebo Chen - Staff Director
    kebo.chen@dot.gov
  - Lindsay Peters-Dawson – Program Analyst
    lindsay.petersdawson@dot.gov

Correspondence

- Written notice of delegations

  Mr. Robert Lauby

  Associate Administrator for Railroad Safety

  Department of Transportation

  1200 New Jersey Avenue, SE

  Washington, DC 20590

  Electronic copies can be emailed to: joann.scott@dot.gov

- GCIS Technical Support

  Email: RsisRXIUpdates@dot.gov

  Phone: (888) 372-9393

References

- Safety Data Public Website
  - Grade Crossing Inventory System
  - FRA Guide For Preparing U.S. DOT Crossing Inventory Forms
  - FRA Web User Guide Grade Crossing Inventory System (GCIS) v2.0
  - FRA Instructions for Electronic Submission of Grade Crossing Inventory Data v2.0
  - FRA Data Migration Strategy Grade Crossing Inventory System (GCIS)

- Note: Many of these reference materials can be found directly within the Grade Crossing Inventory System under the Help tab

Helpful 3rd Party API Tools

- Google Chrome App: Postman

https://chrome.google.com/webstore/detail/postman/fhbjgbiflinjbdggehcddcbncdddomop?hl=en

- Fiddler: IE Developer Tools (F12)

Note: We do not provide support for these tools.

Q&A Session