Michigan NRCS
Technical Assistance Tracking System (TATS)

Project Overview

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INTRODUCTION

This report gives an overview of the Technical Assistance Tracking System (TATS) application, which was developed for the Michigan NRCS State Office.

BACKGROUND

The TATS application was designed to be a web-based application for managing workload-related information for NRCS programs. The intended users of the TATS system are Michigan NRCS conservationists in the service center, area, and state offices. TATS was designed to replace and enhance the functionality provided by the Excel-based Farm Bill tracking tool. Although the application was intended for NRCS users in Michigan, potential future transition to national use was taken into account in design decisions.

In April 2007, the NRCS National Headquarters authorized a project to build a Customer Relationship Manager (CRM) tool for nation-wide deployment. Since there is expected to be significant overlap in the functionality provided by the CRM tool, and because the CRM tools is a conventionally funded project at the national level, the Michigan NRCS chose to redirect the development resources allocated to TATS toward participation in developing the requirements for the national CRM application.

HIGH-LEVEL REQUIREMENTS

The TATS application was designed to facilitate the management of technical assistance requests in the state of Michigan. The application would provide a mechanism for district conservationists, assistant state conservationists for field operations, and state office staff members to:

- track, prioritize, and service assistance requests;

- track detailed program-specific workload information, status reviews, appeals, and contract modifications; and

- produce summary reports of workload levels by program and aggregating unit (i.e. service center or administrative area)

SYSTEM ARCHITECTURE

During March 2005, the decision was made to develop the TATS application using ASP.NET/C# for the front-end interface and SQL Server 2000 for the back-end database. This decision was made for several reasons including:

- ITS currently uses ASP.NET/SQL Server 2000 for many of their hosted applications, and hosting the application at the ITS Web Farm would facilitate integration with existing (and planned) services hosted by ITS (i.e. SCIMS, eAuth, authZ, NCPDB).

- In the past, ITS had experienced deployment and data access issues with desktop UI applications (i.e. Access Project) when distributed to large numbers of users. The use of web UIs was found

to ease deploying updates to an application.

From May to August of 2006, TATS development activities were transitioned from an in-house development environment to one hosted by ITS on its Web Farm in order to facilitate eventual transition to testing and productions servers.

DATA MODEL

The TATS application is designed to manage workload-related information for many NRCS programs, including many data fields that are not addressed by the national NRCS applications (i.e. ProTracts, Toolkit). As such the TATS data model includes a extensive list of attributes related to the process steps required for servicing customer requests (for example: dates of form completion and whether a site was visited). Tables for storing this workload information include:

- one general workload table (i.e. for storing attributes that are common across all programs)

- program-specific data tables

    o provides program-specific storage for workload information for nine programs: CRP, CSP, CTA-General, CTA-GLC, EQIP, GRP, PL-566 (WF08), WHIP, WRP

    o provide storage for approximately 120 program-specific fields

A complete description of the data tables, data columns, and table relationships is contained in "TATS Database Design" document.

USER INTERFACE

The TATS application presents the user with two primary web pages: one for entering workload information and one for creating summary reports of that data. The workload data entry web page lists customer information, followed by hierarchical information on assistance requests and the workload information associated with those requests. The workload data entry web page is illustrated in Figure 1 and Figure 2. The summary report web page is illustrated on Figure 3.
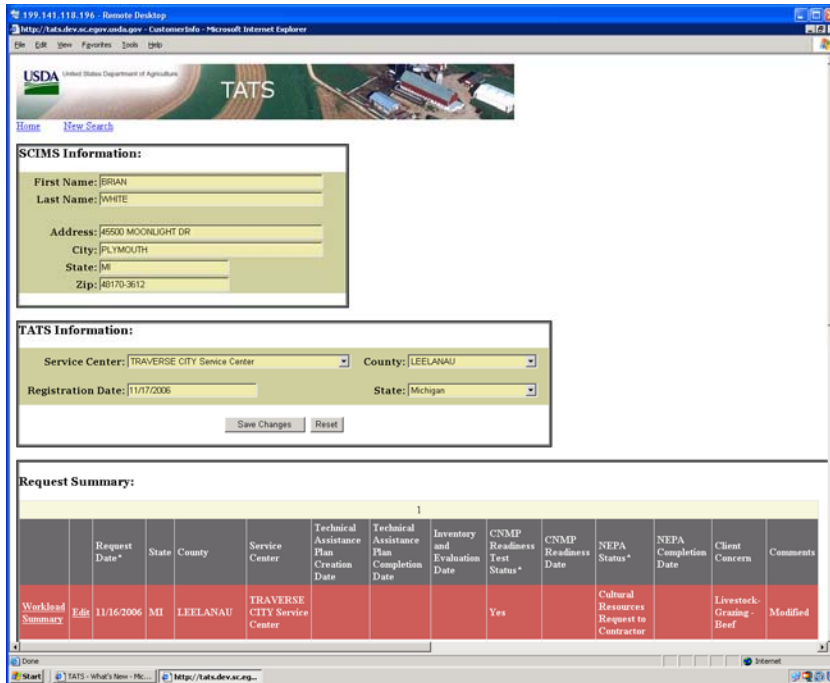
Figure 1 - Screenshot illustrating the workload data entry web page. Users may review selected SCIMS information for a customer, view/edit additional customer information (stored in the TATS database), and view/edit entries on customer requests.
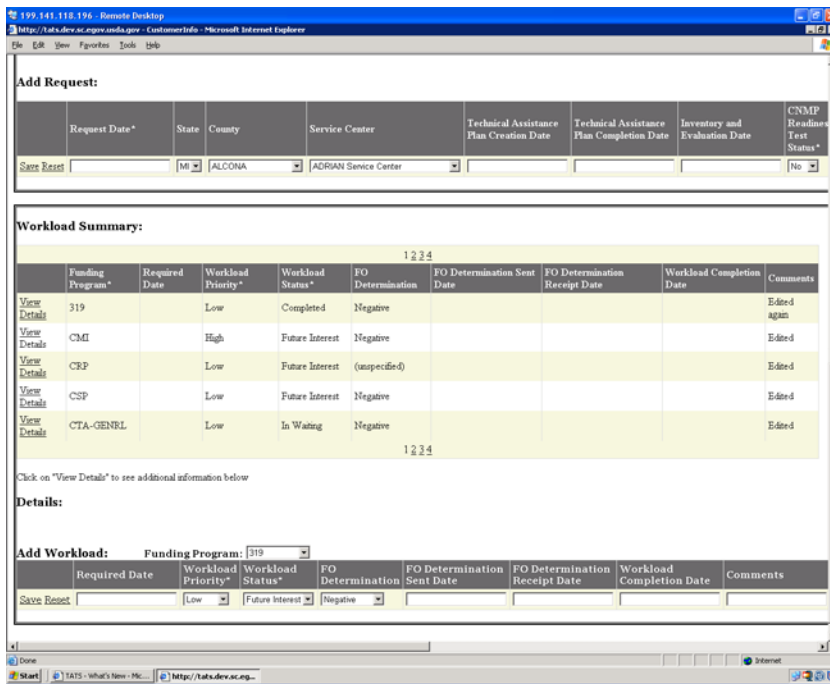

Figure 2 - Screenshot illustrating additional controls on workload data entry web page. Users may add entries on customer requests and add/view/edit information on workloads associated with customer requests.
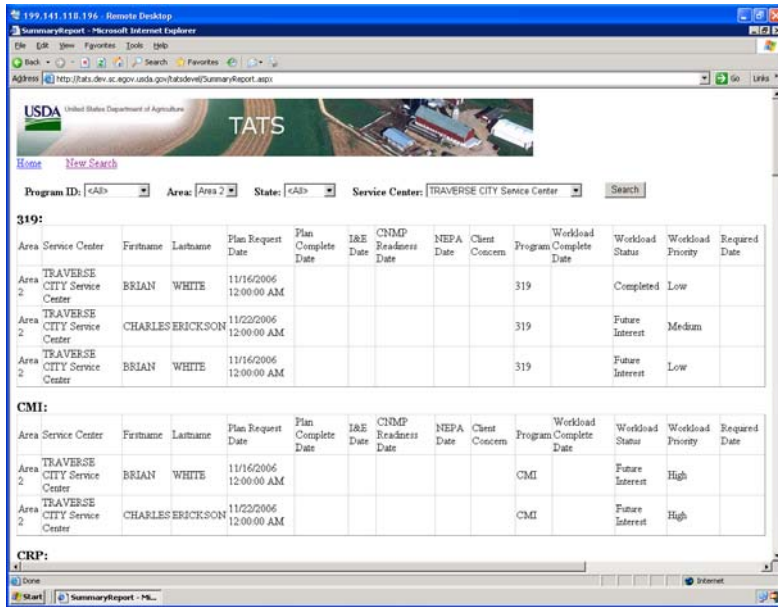
Figure 3 - Screenshot of an example summary report for the Traverse City Service Center. Users may constrain search results by specifying the program and/or geography unit (administrative area or service center).

MISC DEVELOPMENT TOPICS

Designing a General Purpose Components

To efficiently manage the large number of data fields, the development team decided to create general code for adding, displaying, and editing program workload information. The column information for each displayed data field is stored in the database, rather than being hardcoded into the web page. This design allows for efficient management of displayed column names, and allows the user interface to automatically adjust for changes (additions, deletions, modifications) made at the database level. Also code for displaying general categories of data fields (i.e. text, date, foreign key) was created, so that the display of individual data fields is consistent and can be efficiently updated across the application.

Authentication and Authorization

The TATS application web pages are protected by SiteMinder, which authenticates users that are attempting to access the TATS website.

ITS is planning to develop a common authorization service (authZ) that could be used across many projects. A common authorization service would benefit TATS and other development projects by reducing duplicated development efforts and to ensure consistency.

SCIMS

The TATS application interfaces with the SCIMS web service for accessing customer information, reducing the need to store any customer information in the TATS database.