Orange County Transportation Authorities Web Based GIS Project Submittal Application

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ESRI Abstract

This case study will review the methodology and technology that Orange County Transportation Authority (OCTA) used to improve their Combined Transportation Funding Programs (CTFP) Call for Projects initiative.

A Call for Projects occurs biennially to all eligible local agencies within Orange County and encompasses Measure M streets and roads competitive programs. CTFP was created to provide local agencies with a common set of guidelines and project selection criteria for a variety of funding programs.

To improve efficiencies in this process, OCTA decided to create a web-based version of the CTFP that would allow end-users to submit application information and delineate project boundaries from their desktop web browser.

The new CTFP system involved the development and implementation of a re-engineered database, a Web-based user interface for entering and maintaining Project information, and an integrated Internet Map System to support application submittals. The new system also permits improved project review, ranking, and administration by OCTA staff.
Project Overview

A Call for Projects occurs biennially to all eligible local agencies within Orange County. The CTFP encompasses Measure M streets and roads competitive programs, as well as federal sources such as the Regional Surface Transportation Program (RSTP). CTFP was created to provide local agencies with a common set of guidelines and project selection criteria for a variety of funding programs. During the 2004 Call for projects, 35 local jurisdictions within Orange County were invited to submit one or more transportation project applications to OCTA. In general, applications fall within one of several funding programs with each program having unique requirements and scoring criteria used for ranking and approval of the submitted applications. The 2004 CTFP will provide $248 million of funding for street and road improvement projects over the next five years.

Prior to the 2004 Call for Projects, OCTA used a forms-based Access database to collect, review and rank project applications. The Access database was sent to each of the 35 local jurisdictions for application submission and then returned to OCTA for consolidation, review, ranking and approval. To improve efficiencies in this process, OCTA decided to create a web-based version of the CTFP that would allow end-users to submit application information and delineate project boundaries from their desktop web browser.

The new CTFP system involved the development and implementation of a re-engineered database, a Web-based user interface for entering and maintaining Project information, and an integrated Internet Map System to support application submittals. The new system also permits improved project review, ranking, and administration by OCTA staff, as well as the generation of reports for monitoring and managing the program.

The presentation will cover the following technology used to create the new CTFP web based application:

- SQL database design
- Web design with ASP programming
- Customized ArcIMS interface allowing end-user project boundary input
CTFP Overview

- **Combined Transportation Funding Program**
  - Encompasses Measure M streets and roads competitive programs, as well as federal sources
  - Provides common set of guidelines and project selection criteria to jurisdictions
  - Each program has unique requirements and scoring criteria used for ranking and approval
  - 2004 CTFP will provide $248 million of funding over the next five years

Funding Programs in 2004 Call for Projects

- Regional Interchange Program (RIP)
- Intersection Improvement Program (IIP)
- Signal Improvement Program (SIP)
- Transportation Demand Management (TDM)
- Master Plan of Arterial Highways (MPAH)
- Growth Management Area (GMA)
- Arterial Highway Rehabilitation Program (AHRP)
- Grade Separation Projects
- Grade Crossing Safety Enhancements
Overall CTFP Process

1. Call for projects
2. Entry and submittal of Applications for funding
3. Scoring, review, and evaluation of Applications
4. Ranking and approval of Applications for funding, and allocation of funding
5. Periodic monitoring and updating of Funded Applications, including payment processing

Previous CTFP System

- System Details
  - Developed in the early 90’s
  - MS Access forms based application
  - Multiple databases including MS Excel
  - Multiple copies of database for each jurisdiction
- Process Steps not well integrated
- Reporting was a challenge to manage
- No geographic component
- No connection to other programs
Re-Engineering Process

- Rational Unified Process
  - Functional Requirements Definition
  - System Design Document
  - System Development
  - System Testing and Deployment
  - System Documentation & Training

Technology

- Software
  - MS SQL Server 2000 SP3
    - SQL user client access licenses (CALs)
  - Microsoft IIS 5.0
  - ESRI ArcIMS 4.0.1
    - Apache Tomcat, Java Development Kit
  - ASP web programming
  - RoboHelp Help Files

- Hardware
  - Compaq ProLiant DL360 G3
    - Intel Xeon 2 x 3.2GHz/1MB (dual CPU)
    - 2 GB’s Ram
GeoTool – Application Geography

- Purpose of the GeoTool
  - Capture geography from its source, in a spatial format, at the time of submittal
  - Support reviews of applications for funding
  - Identify overlapping, coincident projects
  - Identify nearby projects (phasing)
  - Built spatial database for use outside the system
Benefits of New System

- Centralized database
- End-user inputs Application information through Internet
- End-user inputs spatial project boundary through Internet
- Automatic scoring and ranking of Applications
- Applications ready for review the day after the Call closes

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