# American River Watershed Project

Project Specification

Upper Tier Outlet Works Folsom Dam Modification

4 August 2005

Regional PDT Formation

- **U.S. Army Corps of Engineers**
  - Sacramento District, CA
  - Walla Walla District, WA
  - Centers of Expertise
- **U.S. Bureau of Reclamation**
  - Sacramento & Folsom, CA
  - Tech Service Center, Denver, CO
- **A-E Firms & Contractors**
  - HDR, Inc., Folsom, CA
  - MGE Engineering, Inc., Sacramento, CA
  - Wadsworth, Pacific City, OR
- **Sponsors**
  - State of California (DWR)
  - The Reclamation Board
  - Sacramento Area Flood Control Association
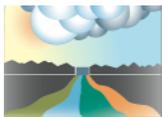
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Challenges & Issues

- Regional PDT Collaboration
- Computer Applications
- Brand Name or Equal
- Submittal Descriptions
- Submittal Items
- Paragraph Numbering
- Measurement and Payment
- Attachments
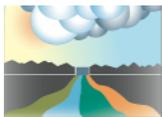
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Regional PDT Collaboration

- Challenge – Coordinate regional team of 35 people
  - Selected a technical lead to coordinate and manage specification development
  - True Virtual Team
    - Met some through Video Teleconference
    - Never met all face to face
- Virtual Private Networking (VPN)
  - Not successfully implemented
    - USBR Security issues
- Army Knowledge Online (AKO)
  - Virtual team capability
    - USBR didn't want to use.
- Specification Development
  - Different master guide specifications & section formats
    - Unified Facility Guide Specifications (UFGS) vs. Master Paragraphs (USBR)
    - SpecsIntact vs. MS Word
  - PDT collaboration and informal review processes
    - Developed Outline Specification - sections assigned to PDT members
    - PDF Documents used for all reviews
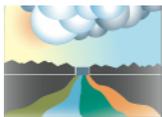
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Computer Applications

SpecsIntact	USACE Mandated for UFGS & Project Specifications. Not used by USBR. Essential for managing specifications.
MS Word	Used by USBR. Also used for producing tables, forms, and other attachments.
Excel	Used for tables and chart attachments.
Imaging	Used for form attachments & processing image file inserts for Word.
AutoCAD	Used for figure & graphic attachments.
Adobe Acrobat 6.0	Used for producing solicitation documents & attaching forms, reports, and reviews.
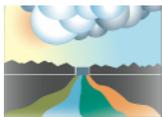
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Brand Name or Equal

- Federal Agencies do not interpret FAR consistently
- Specify brand name or equal only as a last resort
    - FAR Subpart 10.004 & DFARS Subpart 210.004
    - When used, include salient features (FAR, Subpart 36.202c).
    - Salient features should be listed in Part 2 or Part 3, as appropriate.
        - Tried to use a Standard of Quality statement in Part 1 only
- Specifying by brand name only is prohibited
    - Unless specially justified and approved (FAR, Subpart 11.104).
    - When approved, use "brand name only - no substitutions"
        - "Material and Workmanship" clause (FAR 52.236-5)

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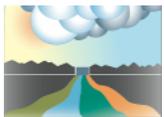
Submittal Descriptions

- Some Used Old Submittal Descriptions (SD)
    - Unified to eleven SD since October 2000

- Some Submittal items placed under wrong SD
    - Shop drawings vs. As-Built Drawings
        - Shop drawings are SD-02 Shop Drawings
        - As-Built Drawings are SD-11 Closeout Submittals
    - Lumped many different SD items into one SD
        - Shop Drawings, mix design, test & report requirements
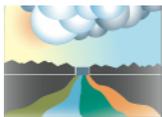
Submittal Items

- Some used old submittal classification codes "GA" & "FIO"
  - Current default is "Information Only"
    - No need to state "FIO"
  - Use only "G" for government approval
  - Additional codes changed for Resident Management System (RMS)
    - Refer to the note in UFGS Section 01330, January 2004
      - "RO" for Resident Office has replaced "RE" for Resident Engineer
      - "DO" for District Office has replaced "ED" for Engineering Division
- Submittal Item not found outside the Submittal Article
  - UFGS is inconsistent in citing Submittal Items in both the Submittal Article and elsewhere in the text
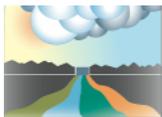
Paragraph Numbering

- Inconsistent paragraph numbering & lettering
  - CSI allows two paragraph numbering formats
    - Alphanumeric - 1.01 a.1.A.1 used by USBR in MS word
    - Numeric - 1.1.1.1.1 used by UFGS in SpecsIntact
  - Converting one paragraph numbering format to the other
    - Both are five levels
      - Conversion from UFGS Numeric to Alphanumeric is simple
      - Conversion from Alphanumeric to UFGS Numeric is **not** simple
    - The real issue is the article and paragraph (subpart) titles.
      - The CSI requires titles for the first level article (subpart)
        » Paragraph titles for lower levels are optional in the alphanumeric.
      - UFGS requires subpart titles for the first five levels
        » Levels below that are lists and items which do not need titles.

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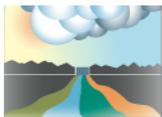
Measurement and Payment

- Measurement and Payment
  - Lump Sum vs. Unit Price?
    - Resident Offices prefer lump sum
      - Easier to manage
      - Progress payments can be made
    - CW projects prefer unit price on uncertain quantities
      - Labor intensive & difficult to manage
      - Split bid items
- Used UFGS Section 01270 MEASUREMENT AND PAYMENT
  - Removed Measurement and Payment subparts from all sections
  - Made to be consistent with pricing schedule
    - CT preferred 10 items or less on the bid schedule
  - Allowed for both lump sum and unit pricing as appropriate
    - Underwater concrete placement
   - Progress payments on gates

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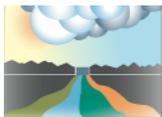
Attachments

- Inconsistent Form Sizes
- Large Environmental Reports
- Tables
- Charts
- AutoCAD Figures

Inconsistent Form Sizes

- Forms are both 30% of original size here.
  - The submittal register is 8.5" x 11" vs. CalOSHA form 301 8.5" x 14". CalOSHA needs to be reduced to 79% to fit on 8.5" x 11" sheet.
- Treat forms like References
  - Tag with <RID>
- Provide hyperlinks to source in Section 01420 for contractor to download & use form.

Large Environmental Reports

- The file size of scanned planning and environmental report attachments can be much larger than the specifications files alone.
  - Some over 40 MB.
- Minimize the size of attachments to minimize download time.
- Use the Adobe Acrobat command "File/Reduce File Size…"
  - This may reduce the the file as much as 75% (40 MB to 10 MB).
 - This can also make the file backward compatible to earlier versions of Adobe Acrobat.

Tables

- **Left - Excel Table**
  - Print to PDF
  - Save as TIF image
  - Insert in MS Word
  - Print to PDF
  - Attach to SpecsIntact PDF
- **Right - MS Word Tables**
  - Print to PDF
 - Attach to SpecsIntact PDF
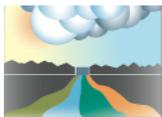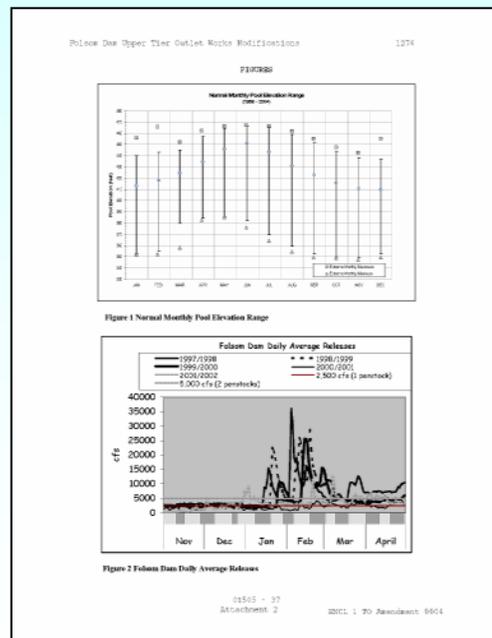
Charts

- **Charts from Excel or other programs**
  - Print to PDF
  - Save as TIF image
  - Insert images into MS Word
  - Print to PDF
  - Attach to SpecsIntact PDF
- **The above process reduces the file size significantly compared to simply scanning documents.**

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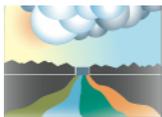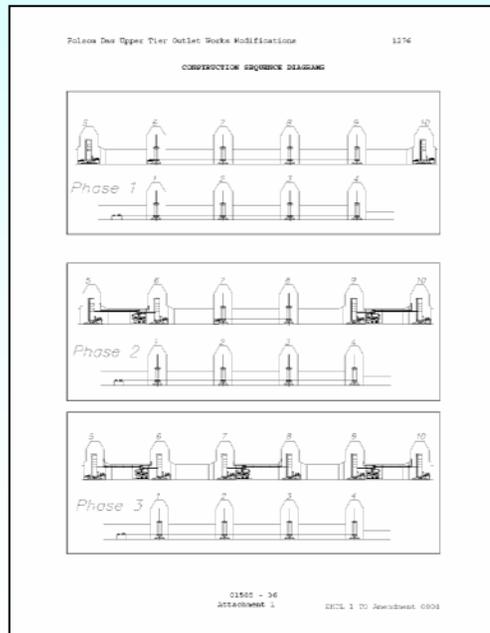
AutoCAD Figures

- The figure is an AutoCAD Object in a MS Word File
  - Print to PDF
  - Attach to SpecsIntact PDF
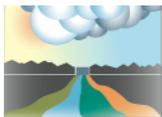
File & Version Management
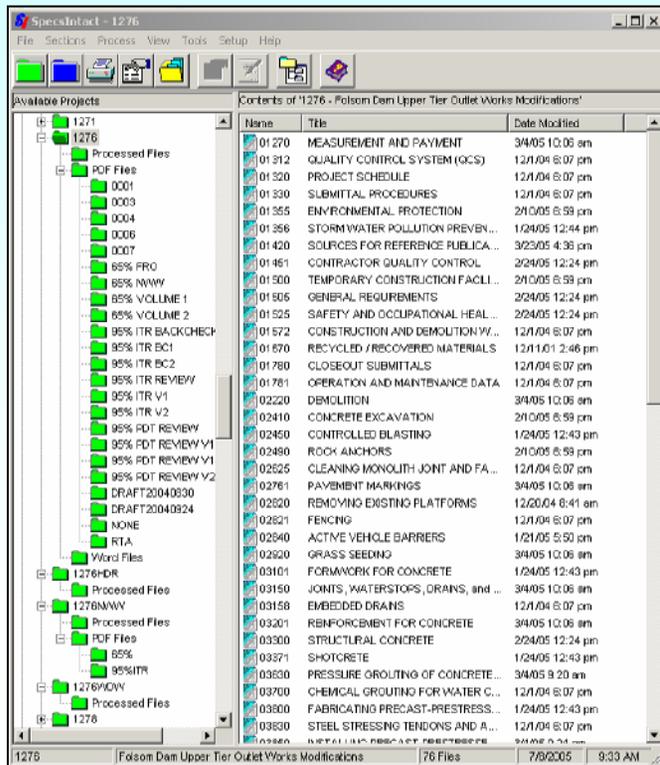
- SpecsIntact made it easier to manage the specification sections and submittal versions.
- Managing the section attachments in MS Explorer was more problematic.
- A web based system would have helped manage files for the regional team.

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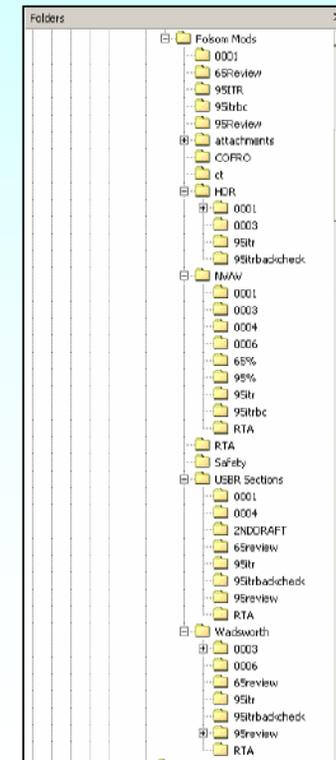
Specification Quality Control

- SpecsIntact made specification QC much easier
  - Especially when amendments added new sections.
- Quality Reports
  - Bracket Verification Report
  - Section Verification Report
  - Submittal Verification Report
  - Reference Verification produces three reports:
    - Duplicate References Report
    - Reference Title Discrepancies Report
    - References Verification Report
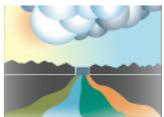
Summary

- Use of SpecsIntact was essential in project specification development.
  - A web based application would be very beneficial.
- Many of the Challenges & Issues presented above are regularly discussed at both the Corps Specification Steering Committee (CSSC) & SpecsIntact Interagency Configuration Control and Coordinating Board (SI-CCCB).
- Current SI-CCCB SpecsIntact Priorities
  - Finish MasterFormat 2004 work
  - Implement a File Attachment/Graphic tag
    - Support the editing and printing of non-SI documents
  - Implement Alternate Paragraph Numbering
  - Implement Better Table Handling
  - Complete Submittal Tracker

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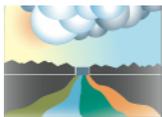
Questions?

- Continue discussion at the Open Meeting of CSSC

- Presented by:

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