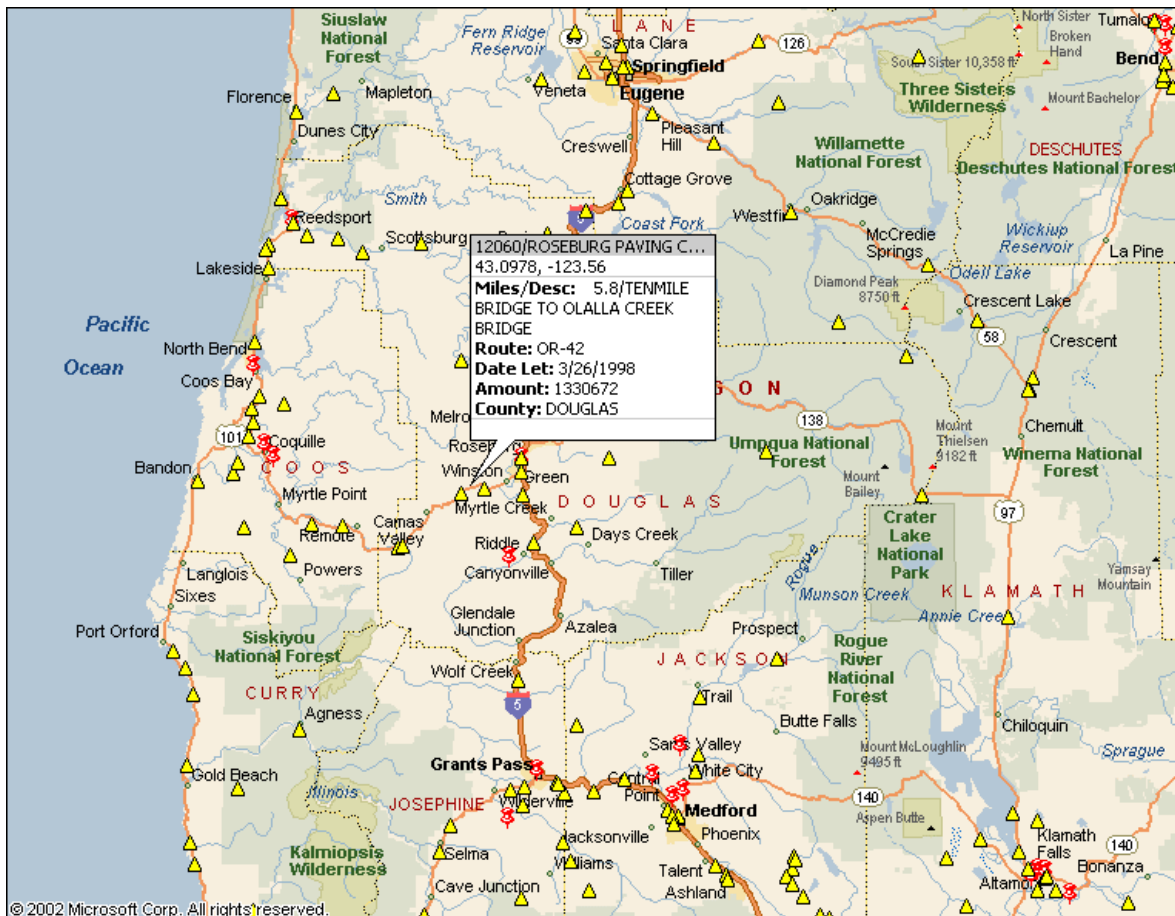


# BAMS/DSS Use of Microsoft Streets & Trips



TEA-TUG Conference  
Burlington, VT  
September 3-10, 2003

**info tech**  
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Printed in the United States of America

## Overview

Construction projects, facilities such as asphalt plants and aggregate pits, and anything else pertaining to a project can be displayed on detailed road maps via Microsoft's Streets & Trips software. Pop-up windows can also provide information about each point that is plotted, such as the awarded bidder and the contract award amount. All that is needed are coordinates for the points to be plotted.

This paper explains one method for using Microsoft Streets & Trips with the BAMS/DSS historic database to provide useful graphics for supporting construction management decisions, contract award analysis, competition studies, and other DOT business activities. The method described in this paper uses a SAS ad hoc program to capture relevant data from the BAMS/DSS historic database and format it into a file that can be imported into the Microsoft application. The following four basic steps are described in this paper.<sup>1</sup>

1. Create a BAMS/DSS data view,
2. Run the accompanying SAS ad hoc program,
3. Import the file into Microsoft Streets & Trips,
4. Format the displayed locations using MS Streets & Trips tools.

### 1. BAMS/DSS Data View

Create a BAMS/DSS data view of the data that you wish to plot. Contracts selection by defining a range of letting dates is most typical, but other criteria can be used such as a list of contracts or all contracts in a county or region. Selection of all models (Automatic) in your view will normally provide most of the data columns that are needed for this application. If you want to display information that is stored in generic fields or fields that are not used by the models, you need to add these to your view (Table/Column). For example, DPROJECT.pjroute used in this paper's example was added to the view because the route number needs to be displayed but it is not used by the models.

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<sup>1</sup> This application is not a supported procedure and should be considered the same as any other ad hoc program offered by BAMS/DSS users. Some minor modifications may be required to make the SAS code work with your data.

## 2. SAS Ad Hoc Program

Modify the following SAS ad hoc program as needed for your data. The program's embedded comments (green text preceded with asterisks \*\*\*\*\*) explain each step of the code.

```
*****
***      ADHOC PROGRAM: LPJCOORD          rodj - May 2003   ***
***                                           ***
*** Description:  Get/List Project Coordinates           ***
***               and format for importing into         ***
***               MS Streets and Maps.                 ***
*** Input:  Use a Data View and Code Table Formats     ***
*** Output: SAS dataset and Excel spreadsheet         ***
*****
;
options source source2 symbolgen ps=65 ls=110 pageno=1
        nodate missing=' ' ;

***** NOTE!!! customize these locations for your DSS folders *****;
***** DO NOT CHANGE THE LIBNAME UNLESS YOU CHANGE IT EVERYWHERE! *****;
libname VIEW      'c:\sadss6\view\asphcnt';
libname XXWORK    'c:\My State\Work';
libname library   'c:\sadss6\bamscom\';
%let qviewpw='password';

***** NOTE!!! customize these titles *****;
title1 'My State Department of Transportation';
title2 'Project Coordinates' ;

***** Get contracts and desired data for pop-up windows *****;
data proposl (keep=contid cndtlet letstat cnawdamt vendor);
    set VIEW.DPROPOS1 (pw=&qviewpw);
run ;

proc sort data=proposl;
    by vendor;
run;

***** Attach vendor names ***** ;
data prop1;
    merge proposl (in=a)
          VIEW.VENDOR (pw=&qviewpw keep=vendor vnames) ;
    by vendor ;
    if a ;
run ;

proc sort data=prop1;
    by contid;
run;

***** Get selected project data columns ***** ;
data project (keep=contid pcn pjdescl pjroute pjlength pjxcoord pjycoord
cntyname);
    set VIEW.DPROJECT (pw=&qviewpw);
```

```

        cntyname = put (county,$county.);    ** get county name **;

*** potential useful logic if desired (currently commented out) ***;
**  if pjlenght not in (.,0);
run ;

proc sort data=project;
    by contid pcn;
run;

***** Combine contract and project data together ***** ;
data prop2;
    merge prop1 (in=a)
          project (in=b);
    by contid ;
    if a and b;
run ;

proc sort data=prop2 nodupkey;
    by contid ;
run;

***** Save data to a permanent SAS dataset *****;
data xxwork.prop3 (rename=(cntyname=County pjxcoord=Longitude
pjycoord=Latitude));
    set prop2;
    format Name Name2 Other1 $char60. len $varying6. Amount Dollar13.;
    length Name Name2 Other1 $60. len $6. ;
    Name = trim(contid)||'/'||vnames ;    *** concatenate vendor name with
contid ***;
    Name2= trim(letstat)||'/'||vendor;    *** concatenate vendor with letting
status ***;
    pjxcoord = -pjxcoord;    *** set longitude to negative for Streets & Maps
***;
    Amount=round(cnawdamt,1);
    if pjlenght gt 0 then do;
        len=round(pjlenght,.1);
        Other1 = len||'/'||pjdesc1 ;    *** concatenate proj.length with descr.
***;
        end;
    else Other1 = pjdesc1 ;
run;

proc print data=xxwork.prop3;
run;

***** Add another data step here to keep only the desired columns *****
***** or wait and do more cleanup in Excel *****;

***** export to Excel *****;
PROC EXPORT DATA= xxwork.prop3
            OUTFILE= "C:\My State\Work\prop3.xls"
            DBMS=EXCEL2000 REPLACE;
RUN;

*** End of code ***;

```

### 3. Import Data Into MS Streets & Trips

Before importing the Excel data that was created in Step 2 into Streets & Maps, appropriate column headings should be created in Row 1. This will significantly simplify importing and displaying the spreadsheet data correctly. The following list is a recommendation for the data columns to retain and the heading to use for each column. You can modify the SAS ad hoc program to retain different information, but the coordinates are required.

<b>BAMS/DSS Column</b>	<b>Excel Row 1 Value (column heading)</b>
DPROJECT.pjxcoord (times -1)	Longitude
DPROJECT.pjycoord	Latitude
DPROPOSL.county	County
DPROPOSL.contid and VENDOR.vnames	Name
DPROPOSL.letstat and DPROPOSL.vendor	Name2
Job length and job description <sup>2</sup>	Miles/Desc
DPROJECT.pjroute	Route
DPROPOSL.cndtlet	Letting Date
DPROPOSL.cnawdamt	Amount <sup>3</sup>

Now you are ready to import the spreadsheet data into Microsoft Streets & Trips. Follow the steps described below to create a Streets & Trips file with the desired points and information annotated onto the map.

1. Select the Data option.
2. Select Import Data Wizard (Ctrl I).
3. Pick the spreadsheet file (built by the SAS ad hoc program) to be imported. (Select “Sheets” on the next pop-up screen if you want to include all worksheets in your spreadsheet file.)
4. Modify column headings only if they are still not what you want them to be.
5. Make sure “First row contains column headings” is checked.
6. Select Finish.

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<sup>2</sup> Your overall contract length may be stored in a generic field or may need to be calculated from DPROJECT.pjlength. Your best contract description may be located in a different field from the one used in this example program.

<sup>3</sup> Streets & Maps does not support dollar formatting the pop-up window information.

This process can be repeated for multiple input spreadsheets to map multiple types of locations on the same map. For example, you may want map project locations and materials facilities on the same map (as shown in the example on the cover page). Now you are ready to go on to the next phase of fine-tuning how the mapped locations are displayed.

#### 4. Format the Displayed Locations Using MS Streets & Trips Tools

Your map is probably displaying all points with the default black pin symbol. Using Streets and Trips formatting tools, you can reset the symbols for easier interpretation. For example, project coordinates can be displayed as yellow triangles and the facilities can be displayed as red pushpins. Follow these steps to finish your map:

1. On the left side of your map, select the first spreadsheet under Pushpins.
2. Click on the Symbol down-arrow to display your symbol choices. Select the small yellow-filled triangle or the desired symbol.
3. Next select the second file with the right-mouse button.
4. Click on the Symbol down-arrow to display your symbol choices. Select the red pushpin or the desired symbol.
5. Repeat this process for each type of data that you imported in separate spreadsheets.
6. Save your Microsoft Streets & Trips file.

Congratulations - you are finished.