

**MAINTENANCE MANAGEMENT
AND CASCADE SOFTWARE SYSTEMS
COST ACCOUNTING MANAGEMENT SYSTEM (CAMS)**

**DISCUSSION MATERIALS FOR SETTING UP THE MAINTENANCE
MANAGEMENT MODULE UNDER CAMS**

COUNTY ROAD ADMINISTRATION BOARD

Date: August 23, 2007
To: Users of Cascade Software's Cost Accounting Management System
From: Larry Pearson, CRAB Maintenance Program Manager
RE: Use of the Maintenance Management module under CAMS

As more counties begin using the Maintenance Management module under Cascade Software Systems' Cost Accounting Management System (CAMS), several useful suggestions for setting up the coding may be considered. Presented below is a brief overview of setup considerations and samples of CAMS input screens.

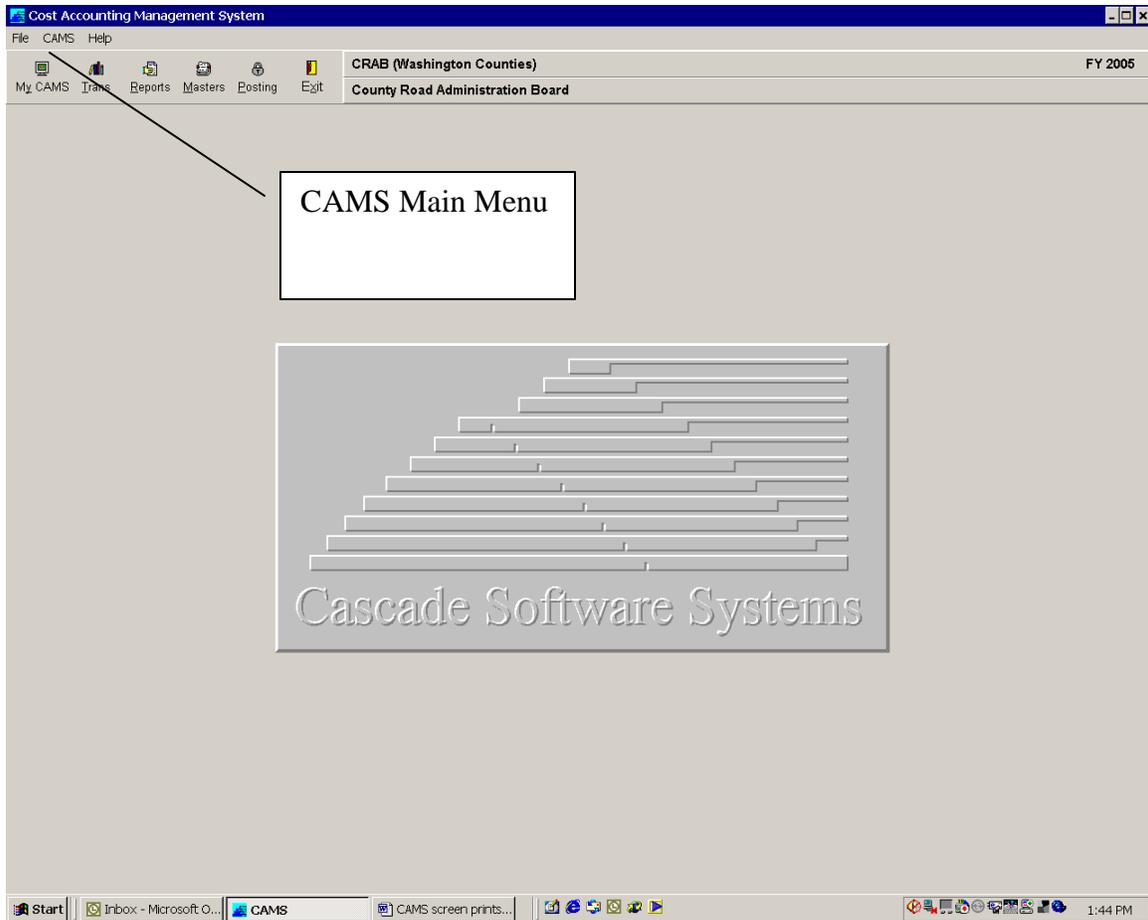
During the typical CAMS installation process in the counties, the primary focus of system setup has been on the accounting aspects. Initially, the county's account information and identification numbering conventions are transferred into CAMS. Then, as the county becomes more familiar with CAMS and the capabilities of account definition hierarchies, these numbering conventions may be modified to more fully utilize the reporting capabilities under CAMS.

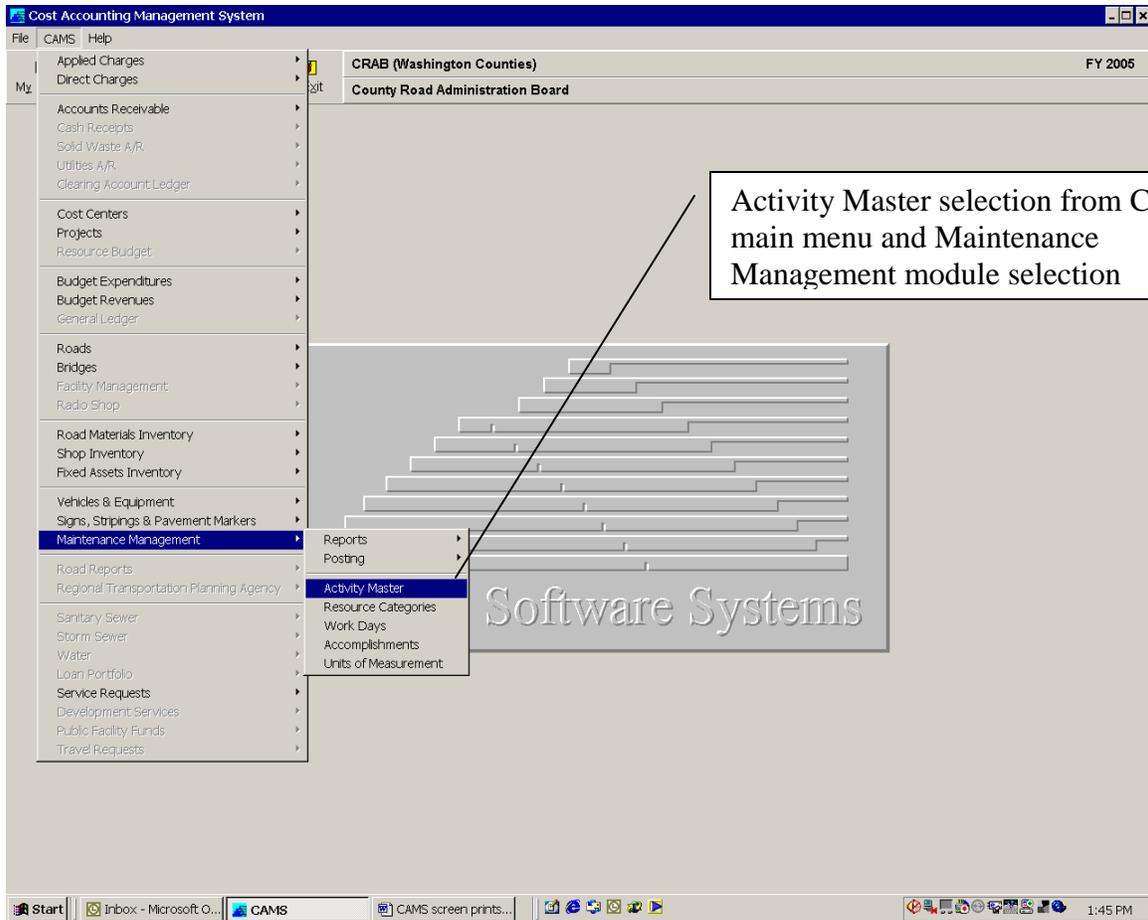
When attention is directed on use of the Maintenance Management module of CAMS, additional questions arise as to numbering conventions which best utilize the capabilities of this module. A useful way to begin organizing maintenance activity definitions under CAMS is to focus on the Activity Master item under the Maintenance Management selection of the CAMS menu item, i.e., select the CAMS tab, then Maintenance Management from the drop-down list, then Activity Master from this list (see below for samples of the screens). As a guide, the following steps could be considered—the screen samples on the following pages may be useful in following these steps:

1. The Activity Master ID is made up of three codes: Division-Activity-Crew, or, alternatively, two codes: Division-Activity
2. These codes are defined under the "Applied Charges" item of the CAMS tab
3. Now, before beginning, note that a "Department" or "Fund" code is used as part of the "Division" code input screen. Codes for the "Department" and/or "Fund" are entered from the "Budget Expenditures" drop down list from CAMS. At this point, i.e., the starting point of the Maintenance Management (MM) module setup, it is important that accounting and maintenance management staff meet to address the needs of the accounting system and the needs of Maintenance Management, especially as related to the definition of account codes.
 - a. Note—the use of "Department" and/or "Fund" may have been defined in the initial CAMS installation and setup.
 - b. Setup information can be found on the tables that can be viewed under the "File"/"System"/"Detail Record Viewer" tab and drop-down menus at the top left of the CAMS menu screen. Note—care should be taken when modifying system configuration settings and guidance should be sought from county systems personnel and from Cascade Software Systems staff.

4. Now, back to the Activity Master ID...this ID is made up of two or three parts—“Division-Activity” or “Division-Activity-Crew” and each of these parts, or codes, are defined on the input screens under the “Applied Charges” item from the drop-down menu.
 - a. Division, such as “Road Maintenance”, may be associated with a “Department” (previously defined) or “Fund”. As examples, “Department” could be ‘Road Department’ or ‘Public Works’ and “Fund” could be ‘Road Fund’. Note, however, that “Division” can be defined as “Roads” or can be defined as a county’s maintenance area, i.e., “District 1” or “Area 1”...depends on how the county wishes to define the Maintenance Management module.
 - b. Activities are defined under the Activity Code item under the “Applied Charges” item and requires a Division, Activity Code, Description and the BARS account number that costs for the activity will be accumulated under.
 - c. Crews are identified under the “Crews” item on the drop-down menu from “Applied Charges”. The Crew input screen utilizes a crew name or ID, and is associated with a Division and Department or Fund. Note that the definition of crew will typically be for what is commonly called Maintenance Areas or Maintenance Districts of a county. CAMS does offer the capability of defining crews more specifically, e.g., Spray Crew, Vegetation Crew, Sign Crew, etc., along with the details of employees, supervisors, and activities related to the crew.
5. OK, so now we’re able to identify the Activity Master ID on the top of the Activity Master screen. Details of the activity, however, must be added to the bottom portion of this screen. Before doing this, a number of other items under Maintenance Management must first be addressed—Resource Categories, Work Days and Units of Measurement. All these are necessary to adequately complete the Activity Master screen. Access to the input screens for these items is from the Maintenance Management selection under the CAMS menu item.
 - a. Resource Categories—identify the resource types (labor, equipment, material) used to complete maintenance activities, a description of the resource type (Maintenance Worker II, Grader, crack sealant) and the hourly or unit rates for these resources. Personnel and ER&R records are a good source of information for these resources.
 - b. Work Days—complete the table to show the number of work days in each month and the typical work hours per day...usually 8 hours, with 10 hour days an option during certain periods of the year.
 - c. Units of Measurement—the units used to measure inventory (road miles, number of culverts, gravel road miles, shoulder miles, ditch feet or miles, etc.) and the units used to measure work accomplishment (pass miles for grading, ditch feet or miles for ditching, gallons for crack sealing, hours for manual brush control, cubic yards for fill or gravelling). Another unit that may be added is “Year” to enable the county to define an activity effort level as “hours per year”.

6. With this information entered and available, detailed activity information can now be entered on the Activity Master screen. Note—the Activity Guidelines that have been discussed as part of Maintenance Management implementation could be a useful source of information for this activity definition.
7. Following the completion of Activity Master screen inputs, several planning reports are available from the report generation capability of CAMS. From the Maintenance Management item, select Reports, then a specific report—e.g., Work Program and Budget, Resource Requirements, Activity Listing, etc.





Cost Accounting Management System

File CAMS Help

CRAB (Washington Counties) FY 2005

County Road Administration Board

Activity Master

Activity Master ID: 0300-2311-09DOUGLAS

ROAD MAINTENANCE
Grading
Douglas County Roads

Main | Resources | Actual Values | Directory

Inventory Amount: 1186
Inventory Unit: MILES
Effort Level: 16.0000

Avg Daily Production: 12.00
Work Unit: PASS MILES

Labor Days Distribution

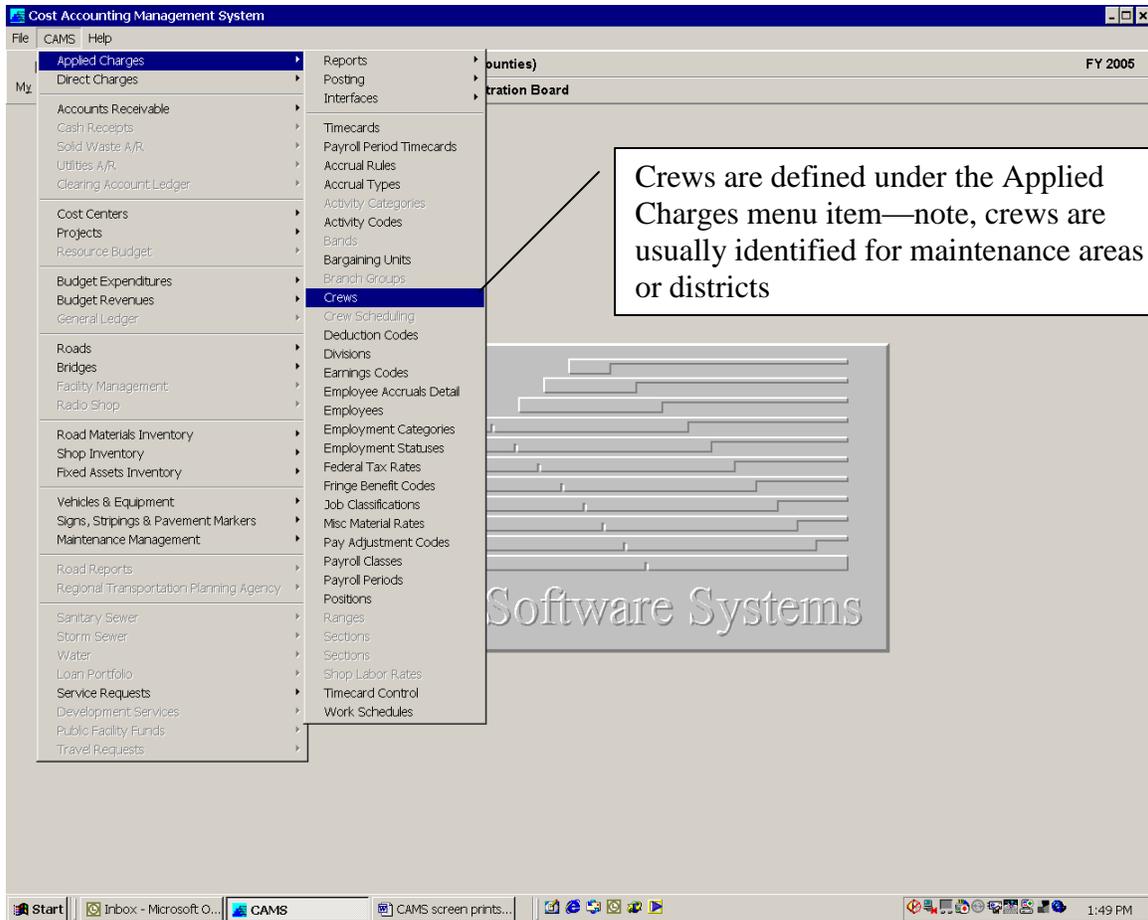
| | Total | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|----------------|--------|-------|--------|--------|--------|--------|--------|------|------|------|--------|--------|-------|
| Percent | 100% | 5% | 10% | 10% | 20% | 10% | 10% | 0% | 0% | 0% | 10% | 20% | 5% |
| Labor Days | 594.67 | 79.73 | 159.47 | 159.47 | 318.93 | 159.47 | 159.47 | 0.00 | 0.00 | 0.00 | 159.47 | 318.93 | 79.73 |
| Days Available | 248 | 21 | 18 | 22 | 22 | 21 | 20 | 22 | 20 | 19 | 22 | 21 | 20 |

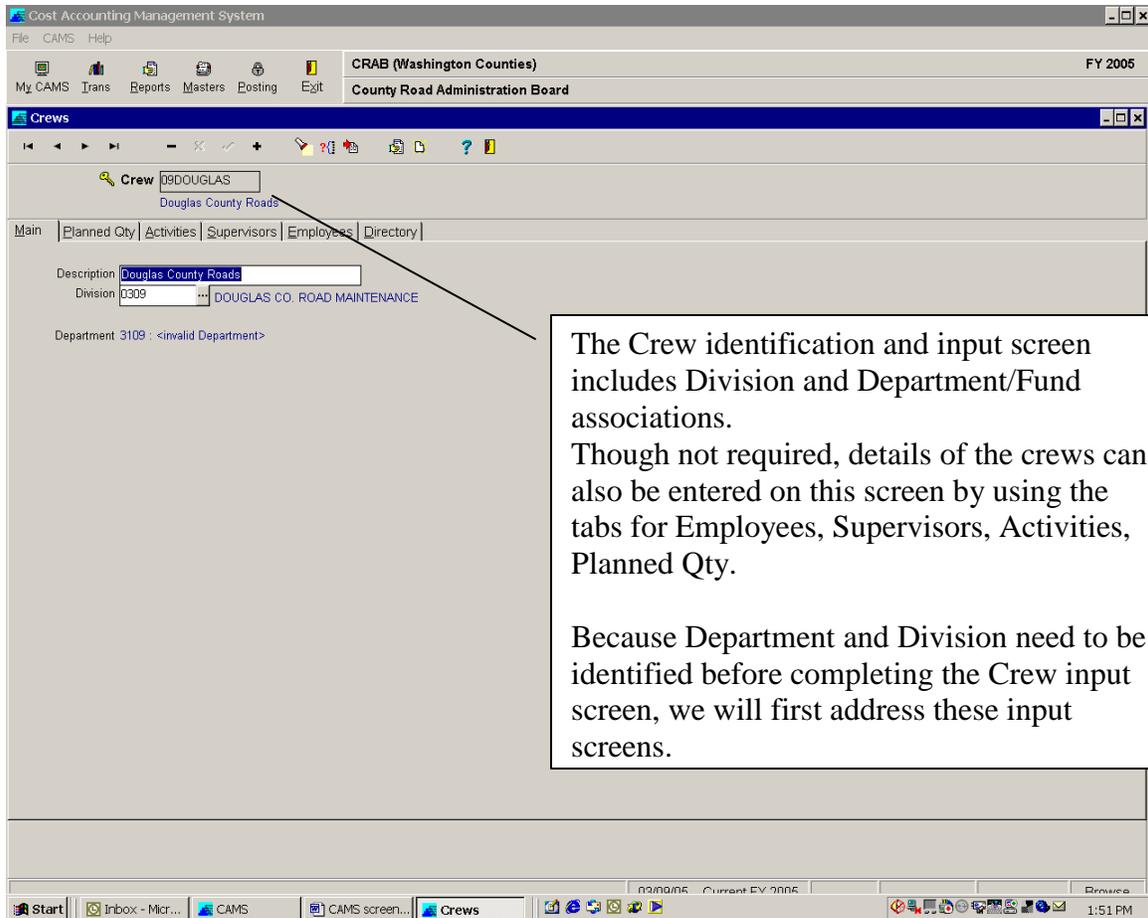
Work Qty: 19,136.00 Crew Days: 1,594.67 Crew Size: 1 Labor Days: 1,594.67

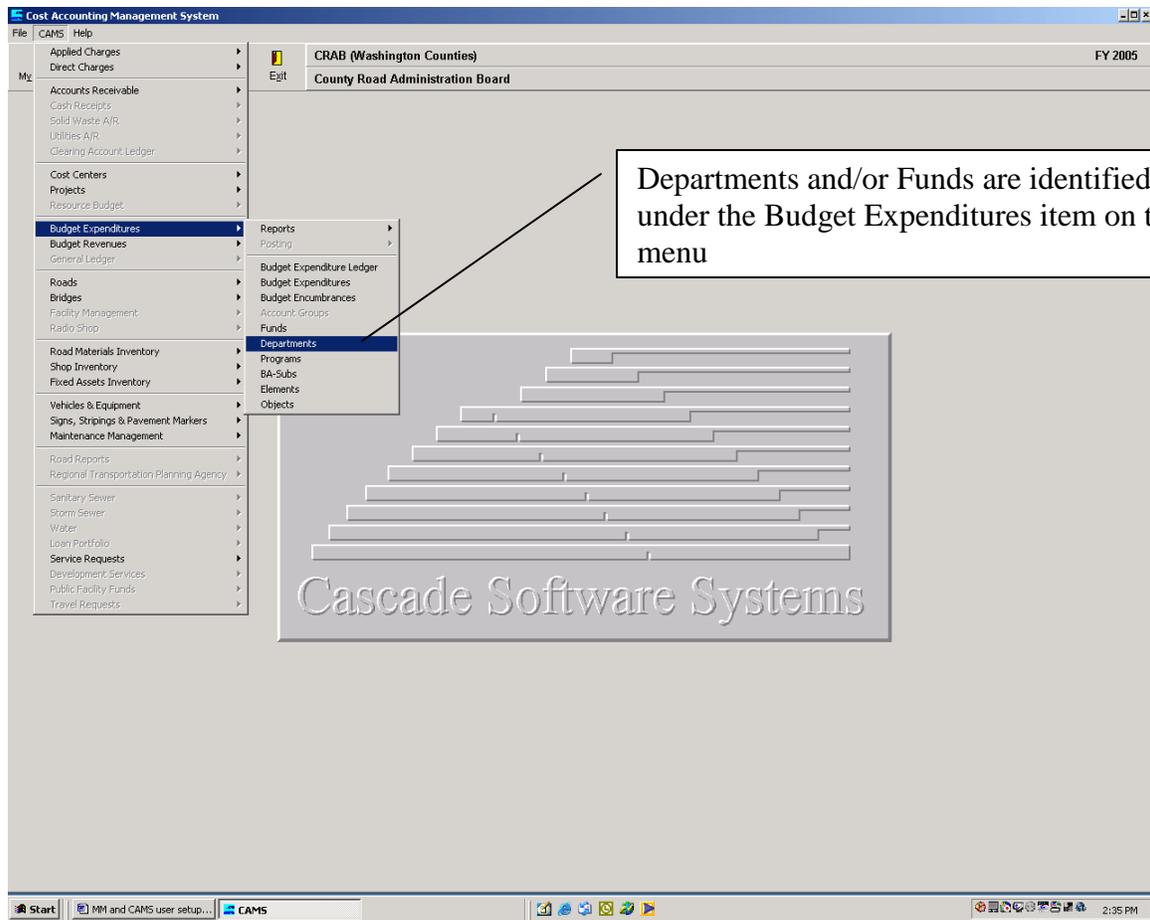
03/09/05 Current FY 2005

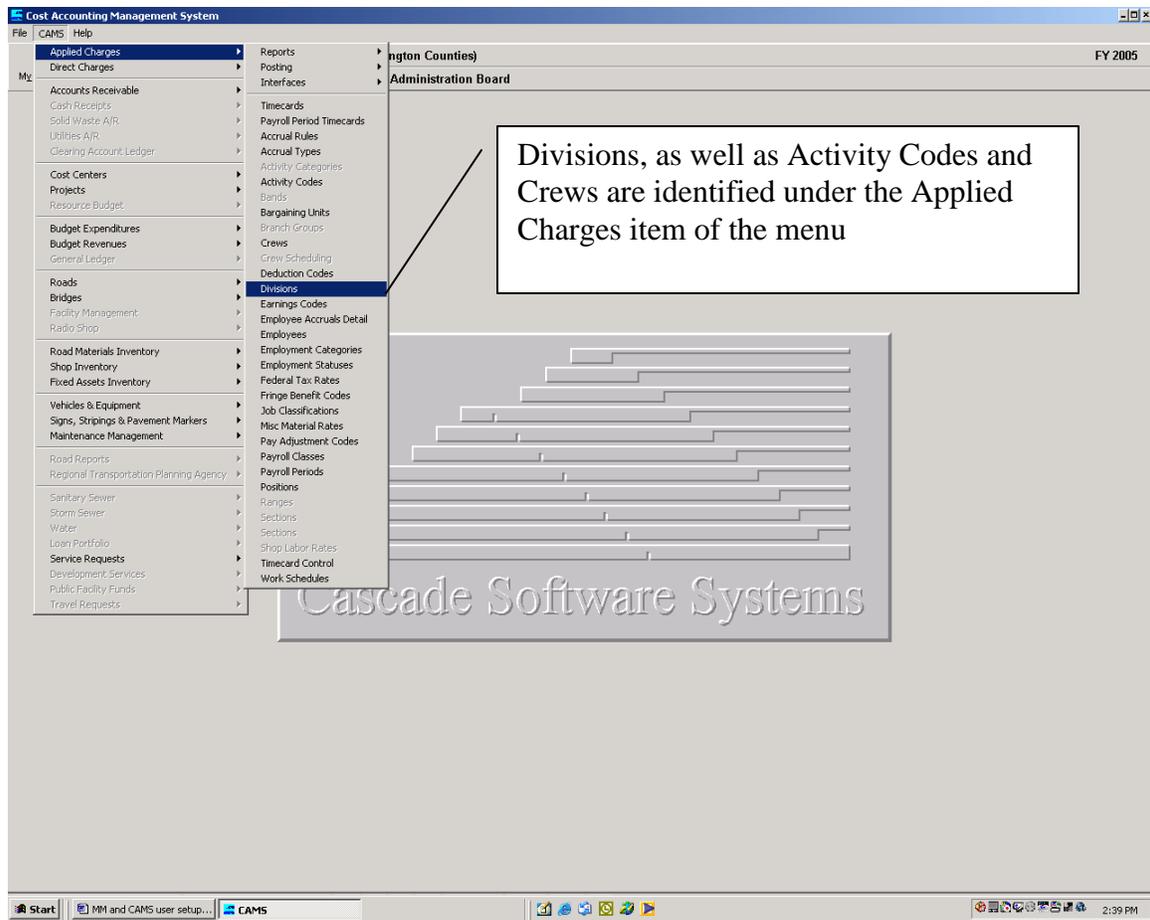
1:54 PM

Activity Master ID is made up of three parts—Division-Activity-Crew or two parts—Division-Activity









Cost Accounting Management System

File CAMS Help

CRAB (Washington Counties) FY 2005

Divisions

Division: 0309
DOUGLAS CO. ROAD MAINTENANCE

Main | Activities | Directory

Description: DOUGLAS CO. ROAD MAINTENANCE
Department: 3109 <invalid Department>

| | Regular | Overtime |
|----------------|----------|----------|
| Fringe Benefit | 0.00% | 0.00% |
| Non-Productive | 0.00% | 0.00% |
| Applied Rate | \$0.0000 | \$0.0000 |

03/09/05 Current FY 2005 Browse

Start | Inbox - Micr... | CAMS | CAMS screen... | Divisions | 1:57 PM

The Division code and description is identified on this screen, together with an associated Department. Note, depending on the system as set up in the county, Fund may be used rather than Department.

Note that the "Division" can be used to identify a specific maintenance area or district.

Activity Master ID 0300-2311-09DOUGLAS
ROAD MAINTENANCE
Grading
Douglas County Roads

Main | Resources | Actual Values | Directory

Inventory Amount: 1186
Inventory Unit: MILES
Effort Level: 16.0000

Avg Daily Production: 12.00
Work Unit: PASS MILES

| Labor Days Distribution | | | | | | | | | | | | | |
|-------------------------|--------|-------|--------|--------|--------|--------|--------|------|------|------|--------|--------|-------|
| | Total | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| Percent | 100% | 5% | 10% | 10% | 20% | 10% | 10% | 0% | 0% | 0% | 10% | 20% | 5% |
| Labor Days | 594.67 | 79.73 | 159.47 | 159.47 | 318.93 | 159.47 | 159.47 | 0.00 | 0.00 | 0.00 | 159.47 | 318.93 | 79.73 |
| Days Available | 248 | 21 | 18 | 22 | 22 | 21 | 20 | 22 | 20 | 19 | 22 | 21 | 20 |

Work Qty: 19,136.00 Crew Days: 1,594.67 Crew Size: 1 Labor Days: 1,594.67

03/09/05 Current FY 2005 1:54 PM

Note that the Activity Master screen is used to identify details of the activity. A completed Activity Guideline can be a useful tool in compiling the various details related to an activity—like inventory, units of measurement, labor, equipment and material resources necessary to complete the activity, effort levels, average daily production, and distribution of work by month.

Before inputting the details of activity, however, a few further activity definition details must first be prepared. These include:

1. Activity Code—and before that, the Department, Division, and Crew
2. Various labor, equipment and material resource information and unit costs
3. Measurement Units for inventory units and work units
4. Work Days—the number of work days in each month and the hours per work day

Cost Accounting Management System

File CAMS Help

CRAB (Washington Counties) FY 2005

County Road Administration Board

Activities

Division 0309 Activity Code 2311

DOUGLAS CO. ROAD MAINTENANCE
Grading

Main | Conditionals | Earnings Codes | Directory

Description Grading Overhead 40.00%

Category ... Department 3109

Pay Adj Code ... <no Pay Adjustment Code> Use Multiple Earnings Codes

Reg Earnings Code ... <no Earnings Code> Productive Time (Time In / Time Out)

O/T Earnings Code ... <no Earnings Code>

Project ... <no Project>

BARS Acct No ... <no BARS Acct No>

This screen is accessed from the CAMS main menu, then selecting Applied Charges, then Activity Codes.

Note that a Division, with an associated Department, is part of the definition screen. On this screen, the all-important tie to the BARS number is also identified.

Start | Inbox - Micr... | CAMS | CAMS screen... | Activities | 1:58 PM

Cost Accounting Management System

File CAMS Help

Applied Charges
Direct Charges

CRAB (Washington Counties)
County Road Administration Board

FY 2005

Accounts Receivable
Cash Receipts
Solid Waste A/R
Utilities A/R
Clearing Account Ledger

Cost Centers
Projects
Resource Budget

Budget Expenditures
Budget Revenues
General Ledger

Roads
Bridges
Facility Management
Radio Shop

Road Materials Inventory
Shop Inventory
Fixed Assets Inventory

Vehicles & Equipment
Signs, Stripings & Pavement Markers

Maintenance Management
Road Reports
Regional Transportation Planning Agency
Sanitary Sewer
Storm Sewer
Water
Loan Portfolio
Service Requests
Development Services
Public Facility Funds
Travel Requests

Reports
Posting
Activity Master
Resource Categories
Work Days
Accomplishments
Units of Measurement

Work Program and Budget
Resource Requirements
Labor Day Distribution
Work Progress
Work Scheduling
Activity Listing
Accomplishments Report

Note that the input screens for the resource information (labor, equipment and materials), Work Days, Units of Measurement and the Activity Master are accessed from the Maintenance Management module selection of the menu.

Start | Inbox - Microsoft O... | CAMS | CAMS screen prints...

Cost Accounting Management System

File CAMS Help

CRAB (Washington Counties) FY 2005

County Road Administration Board

My CAMS Trans Reports Masters Posting Exit

Resource Categories

Resource Category 0101
ROAD CREW WORKER

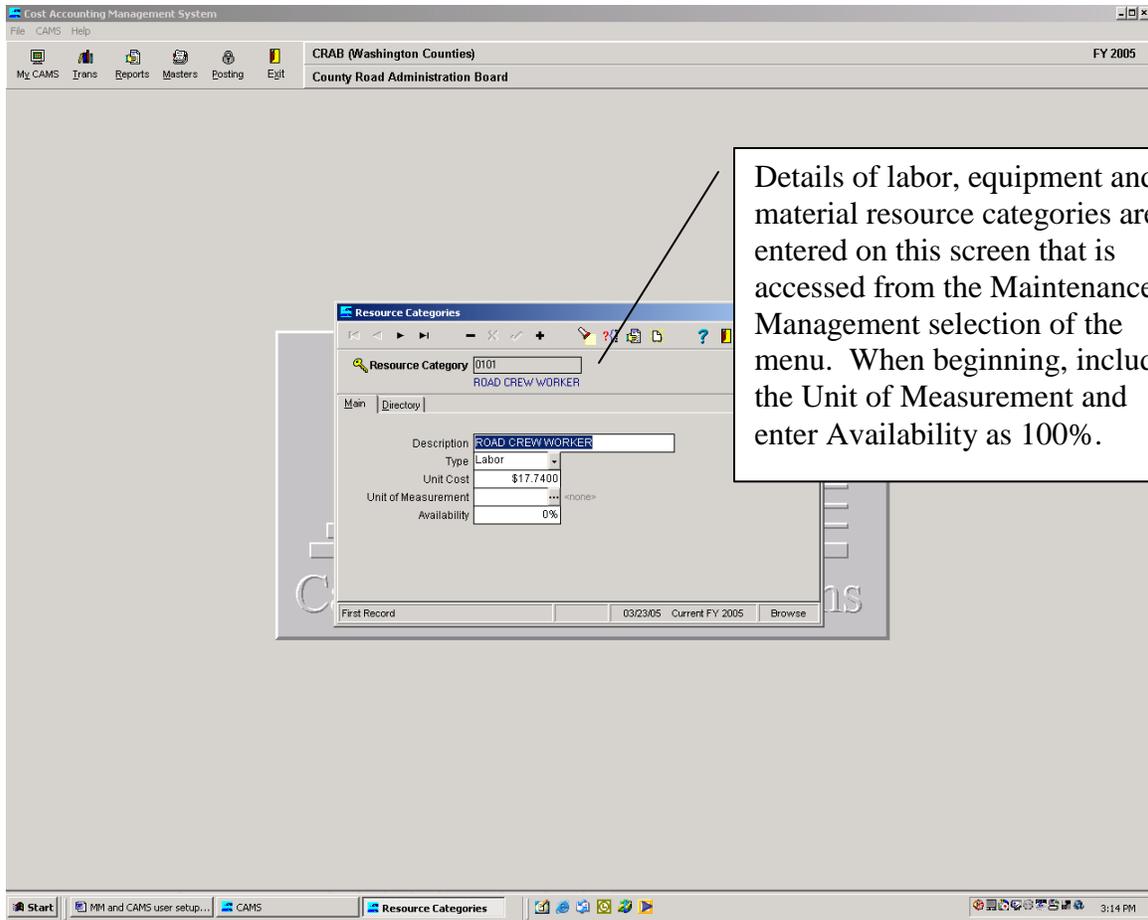
Main Directory

| Resource Category | Description | Type |
|-------------------|------------------------------------|------|
| 0101 | ROAD CREW WORKER | L |
| 0102 | ROAD CREW WORKER - OT RATE | L |
| 0103 | EQUIPMENT OPERATOR I | L |
| 0104 | EQUIPMENT OPERATOR I - OT RATE | L |
| 0105 | EQUIPMENT OPERATOR II | L |
| 0106 | EQUIPMENT OPERATOR II - OT RATE | L |
| 0107 | EQUIPMENT OPERATOR III | L |
| 0108 | EQUIPMENT OPERATOR III - OT RATE | L |
| 0109 | ROAD CREW SUPERVISOR I | L |
| 0110 | ROAD CREW SUPERVISOR I - OT | L |
| 0111 | ROAD CREW SUPERVISOR II | L |
| 0112 | ROAD CREW SUPERVISOR II - OT RATE | L |
| 0113 | ROAD CREW SUPERVISOR III | L |
| 0114 | ROAD CREW SUPERVISOR III - OT RATE | L |
| 0115 | BRIDGE CREW WORKER | L |
| 0116 | BRIDGE CREW WORKER - OT RATE | L |
| 0117 | BRIDGE CREW SUPERVISOR | L |
| 0118 | BRIDGE CREW SUPERVISOR - OT RATE | L |
| 0120 | HEAVY EQUIPMENT MECHANIC I | L |
| 0122 | HEAVY EQUIPMENT MECHANIC II | L |
| 0201 | MISC EQUIPMENT | E |
| 0202 | AIR COMPRESSOR | E |
| 0204 | BACKHOE | E |
| 0206 | BROOM | E |
| 0208 | CEMENT MIXER | E |
| 0210 | CHAIN SAW | E |
| 0211 | BRIDGE TRUCK | E |

First Record 03/09/05 Current FY 2005 Browse

Start | Inbox - Micr... | CAMS | CAMS screen... | Resource C... | 2:06 PM

This is the directory view of the Resource Categories input screen. The Main view is shown on the next page.



Cost Accounting Management System

File CAMS Help

CRAB (Washington Counties) FY 2005

Work Days

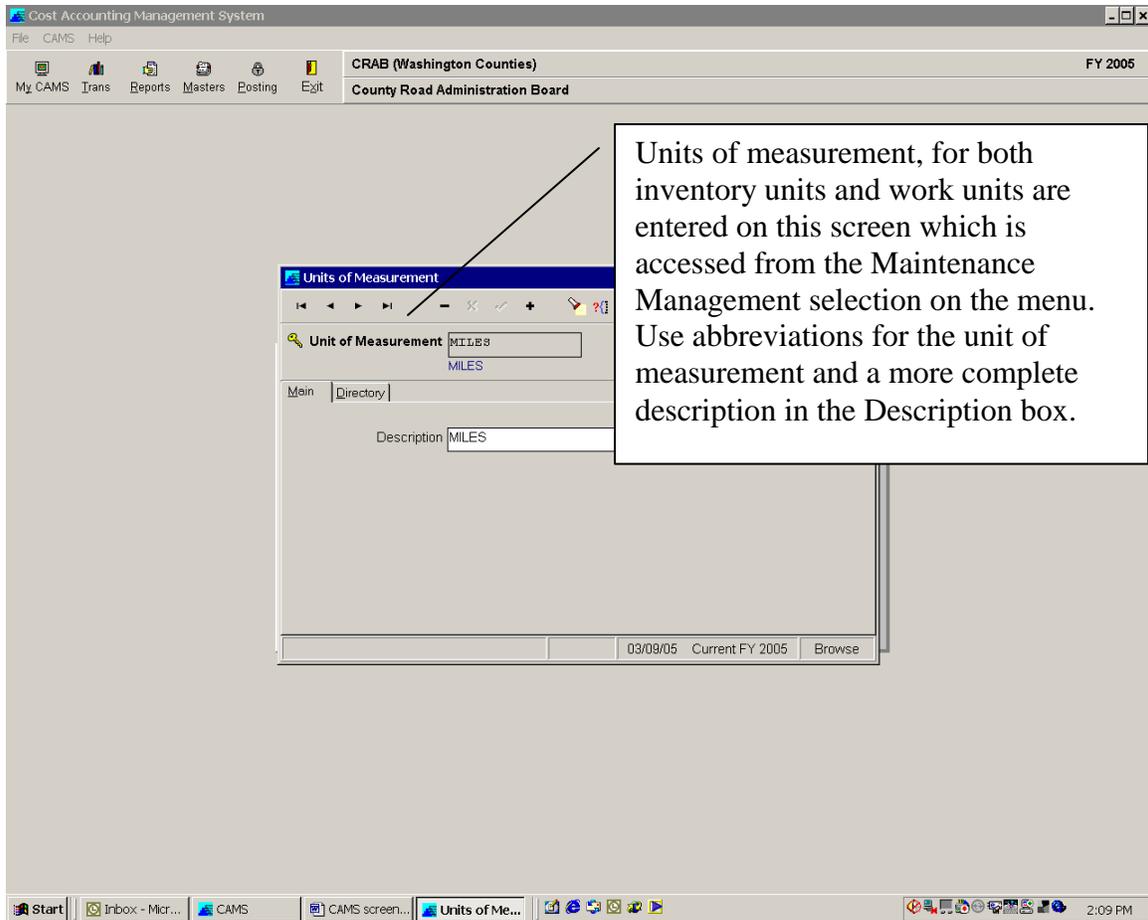
Main

| | Total | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Work Days | 249 | 20 | 19 | 22 | 21 | 21 | 21 | 20 | 23 | 21 | 20 | 20 | 21 |
| Hours per Day | 96 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |

Work Days by month and hours per day are entered on this screen which is accessed from the Maintenance Management selection on the menu. Note that 10-hour days may also be entered for some months.

First Record 03/09/05 Current FY 2005 Browse

Start | Inbox - Micr... | CAMS | CAMS screen... | Work Days | 2:07 PM



Cost Accounting Management System

File CAMS Help

CRAB (Washington Counties) FY 2005
County Road Administration Board

Activity Master

Activity Master ID: 0300-2311-09D00GLAS
ROAD MAINTENANCE
Grading
Douglas County Roads

Main Resources Actual Values Directory

Inventory Amount: 1126
Inventory Unit: MILES
Effort Level: 16.0000

Avg Daily Production: 12.00
Work Unit: PASS MILES

Labor Days Distribution

| | Total | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|----------------|--------|-------|--------|--------|--------|--------|--------|------|------|------|--------|--------|-------|
| Percent | 100% | 5% | 10% | 10% | 20% | 10% | 10% | 0% | 0% | 0% | 10% | 20% | 5% |
| Labor Days | 594.67 | 79.73 | 159.47 | 159.47 | 318.93 | 159.47 | 159.47 | 0.00 | 0.00 | 0.00 | 159.47 | 318.93 | 79.73 |
| Days Available | 248 | 21 | 18 | 22 | 22 | 21 | 20 | 22 | 20 | 19 | 22 | 21 | 20 |

Work Qty: 19,136.00 Crew Days: 1,594.67 Crew Size: 1 Labor Days: 1,594.67

Start | Inbox - Micr... | CAMS | CAMS screen... | Activity Ma... | 2:33 PM

To fully define maintenance activities and utilize the full potential of CAMS, the Activity Master screen is completed. Note that, as the activity is defined, the work quantity (annual), activity days and labor days is calculated and shown on the bottom of the screen.

Cost Accounting Management System

File CAMS Help

CRAB (Washington Counties) FY 2005

County Road Administration Board

Activity Master

Activity Master ID: 0300-2311-09D00GLAS

ROAD MAINTENANCE
Grading
Douglas County Roads

Main Resources Actual Values Directory

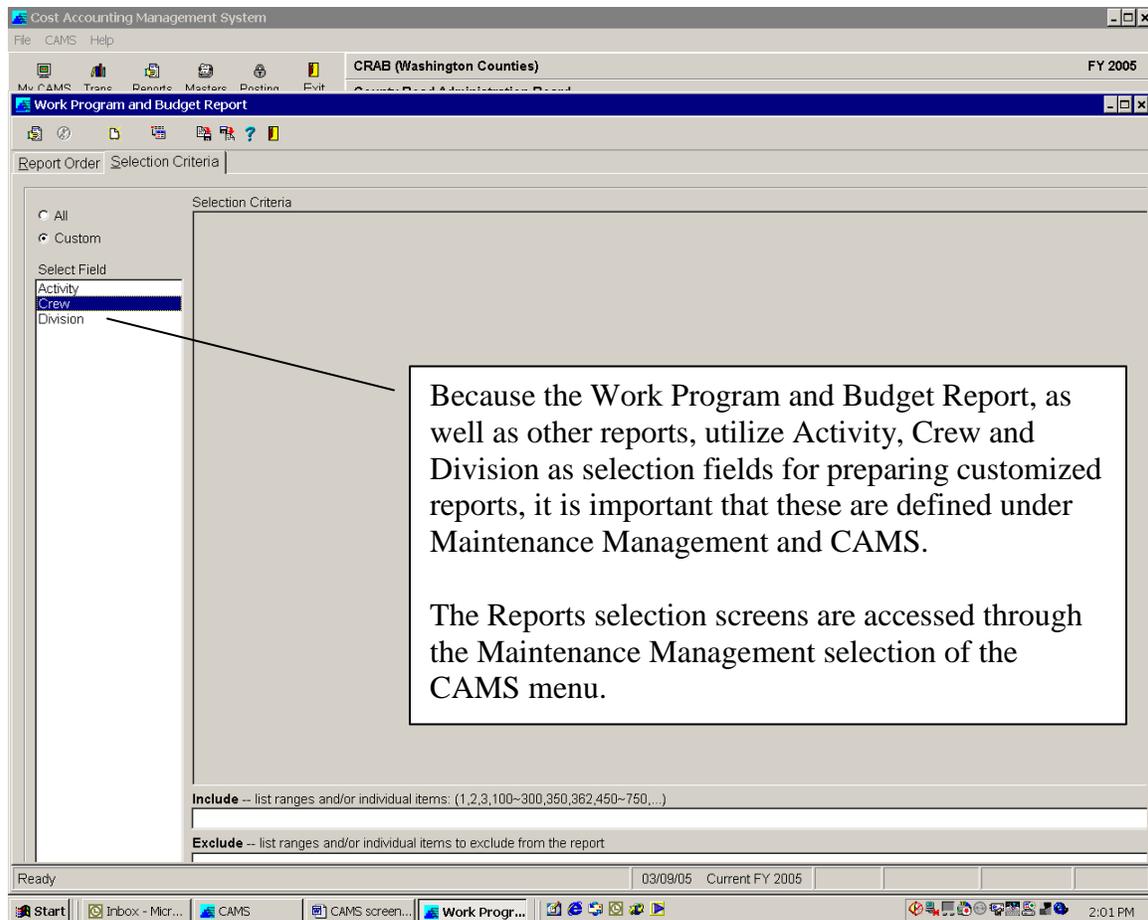
| Resource Category | Description | Type | Unit Cost | Quantity |
|-------------------|------------------|-----------|-----------|----------|
| E101 | GRADER | Equipment | 28.00 | 1 |
| E102 | PICKUP | Equipment | 4.00 | 1 |
| L203 | MAINT WORKER III | Labor | 28.64 | 1 |

The Resources tab on the Activity Master screen can be used to provide a readily accessible summary of the labor, equipment and materials planned for each activity.

Resources

| Work Qty | Crew Days | Crew Size | Labor Days |
|-----------|-----------|-----------|------------|
| 19,136.00 | 1,594.67 | 1 | 1,594.67 |

Start | Inbox - Micr... | CAMS | CAMS screen... | Activity Ma... | 2:34 PM



**For further discussion, please call:
Larry Pearson, Maintenance Program Manager
County Road Administration Board
(360) 951-0929 or by email: larry@crab.wa.gov**

For additional details regarding maintenance management, visit
CRAB's website at www.crab.wa.gov/maintenance