



# Munsys 15.1

## DEVELOPERS GUIDE





## Munsys® Developers Guide

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# Chapter 1

## Introduction

### Overview

Munsys requires an API that will allow third parties to develop custom applications. In addition to custom applications, clients will be able to extend and enhance the Munsys functionality to suit their organization's requirements. The API is a LISP interface that enables users to interact with Munsys Objects, as well as the Oracle database. The API does not cater for COM development, as the C++ API and VB API is beyond the scope of this document.



## Chapter 2

# Function Definition Specification

### Function Naming

The API interface should adhere to the following specification:

The function name should be prefixed by “mun-”, then by function category, and lastly by the actual name of the function. The name of the function should inform the user of its exact use. The function name must always contain, where appropriate, “get” or “set”, depending on whether the function is getting or setting a value. The following is a list of categories for the functions:

- Munsys Spatial Object Functions – spo  
All functions that operate on a spatial object will have the category code of spo whether it sets or gets information from the spatial object.
- Database Functions – db  
Functions that retrieve information from the database or functions that set information in the database will have the category code of db.
- MUNLABEL Functions – munlabel  
MUNLABEL functions are functions that will only operate on MUNLABEL objects.
- MUNPOINT Functions – munpoint  
MUNPOINT functions are functions that will only operate on MUNPOINT objects.
- MUNLINE Functions – munline  
MUNLINE functions are functions that will only operate on MUNLINE objects.
- MUNPOLY Functions – munpoly  
MUNPOLY functions are functions that will only operate on MUNPOLY objects.
- General Utility Functions – utl  
General Utility functions that perform some operation other than what is presented above, will reside under the utl category code.

An example of a function that sets an attribute value of a Munsys Spatial Object would be defined as mun-spo-setattribute

All the functions listed in this document should check that the user is currently connected to the database.



## Chapter 3

### Global Variables

The following variables are defined in Munsys and should not be overwritten by any means.

#### Application Variables

| Variable  | Description                                                          |
|-----------|----------------------------------------------------------------------|
| #MSHEMA   | Name of the currently logged in schema                               |
| #MUSER    | Name of the currently logged in user                                 |
| #MENVIRO  | Name of the database connection environment                          |
| #LSP_DIR  | Directory path of the Munsys applications routines                   |
| #INST_DIR | Directory path of the current installation of Munsys                 |
| #MDCL_ID  | Global Munsys dialog ID                                              |
| #APP_LST  | List of installed applications                                       |
| #DWG_DIR  | Dwg path of where to look for Catalog and Road Intersection drawings |

All application variables that are session bound will have a prefix of # whereas all database variable will have a prefix of \* and a suffix of \*. For example, to reference the session variable of CMS\_PARCEL\_LSTATUS you would use the following:

Command: !#CMS\_PARCEL\_LSTATUS

“C”

To reference the database stored value, you would use the following:

Command: !\*CMS\_PARCEL\_LSTATUS\*

“R”

The “Types” are categorized as follows:

C – Character

S – Symbol (T of nil)

R – Real number

I – Integer

A – Angle

| Type | Category | Variable               | Description                           |
|------|----------|------------------------|---------------------------------------|
| C    | CFS      | CFS_CBLTYPE            | Cable Fiber Type                      |
| C    | CFS      | CFS_CBLGROUP           | Cable Fiber Group                     |
| R    | CFS      | CFS_CBLDIAMETER        | Cable Fiber Diameter                  |
| R    | CFS      | CFS_FIBSYM_SCL         | Cable Fiber Symbol Scale              |
| R    | CFS      | CFS_LBLFIBLINK_TSIZE   | Cable Fiber Label Height              |
| R    | CFS      | CFS_DIM_TSIZE          | Dimension Note Height                 |
| R    | CFS      | CFS_FIBDIM_OFF         | Cable Fiber Dimension Distance        |
| R    | CFS      | CFS_NOTE_TSIZE         | Note Tag Height                       |
| R    | CFS      | CFS_GEOM_TOL           | Geometry Tolerance                    |
| R    | CFS      | CFS_GEOM_ARCTOL        | Fiber Geom Settings                   |
| C    | CFS      | CFS_GEOM_UNIT          | Geometry Unit                         |
| S    | CFS      | CFS_CBLAUTOTERM        | Cable Fiber Auto Terminate            |
| S    | CFS      | CFS_CBLASKDUCT         | Cable Fiber Duct Prompt               |
| S    | CFS      | CFS_CBLAUTOTRACE       | Cable Fiber Auto Trace                |
| S    | CFS      | CFS_CBLZOOMTONODE      | Cable Fiber Zoom to Node              |
| R    | CFS      | CFS_CBLZOOMTONODESCALE | Cable Fiber Zoom to Node Scale Factor |
| C    | CMS      | CMS_BUILDING_TYPE      | Building Type                         |
| C    | CMS      | CMS_DENSITY_TYPE       | Density Type                          |
| R    | CMS      | CMS_EASEMENT_OFFSET    | Easement Offset Distance              |
| R    | CMS      | CMS_EASEMENT_TSIZE     | Easement Tag Height                   |
| C    | CMS      | CMS_EASEMENT_TYPE      | Easement Type                         |
| C    | CMS      | CMS_LANDUSE_TYPE       | Land Use Type                         |
| **R  | CMS      | CMS_MUNICIPAL_TSIZE    | Municipality Tag Height               |
| R    | CMS      | CMS_NOTE_TSIZE         | Note Tag Height                       |
| C    | CMS      | CMS_PARCEL_LSTATUS     | Parcel Legal Status                   |
| R    | CMS      | CMS_PARCEL_TSIZE       | Parcel Tag Height                     |
| C    | CMS      | CMS_PARCEL_TYPE        | Parcel Type                           |
| C    | CMS      | CMS_PARCEL_WSTATUS     | Parcel Work Status                    |

|    |     |                         |                                     |
|----|-----|-------------------------|-------------------------------------|
| R  | CMS | CMS_SHORT_OBJECTS       | Short Objects                       |
| R  | CMS | CMS_SRCH                | Cadastral Search Tolerance          |
| C  | CMS | CMS_STR_FNT             | Street Text Font                    |
| R  | CMS | CMS_STRADDR_TSIZE       | Street Address Tag Height           |
| R  | CMS | CMS_STRNAME_TSIZE       | Street Name Tag Height              |
| *R | CMS | CMS_SUBURB_TSIZE        | Suburb Tag Height                   |
| *C | CMS | CMS_TOWN_FNT            | Township Font                       |
| *C | CMS | CMS_TOWN_LSTATUS        | Township Legal Status               |
| *R | CMS | CMS_TOWN_TSIZE          | Township Tag Height                 |
| *C | CMS | CMS_TOWN_WSTATUS        | Township Work Status                |
| *R | CMS | CMS_WARD_TSIZE          | Ward Tag Height                     |
| C  | CMS | CMS_ZONING_TYPE         | Zoning Type                         |
| C  | CRS | CRS_CRTTYPE             | Cable Route Type                    |
| C  | CRS | CRS_CRT_OWNER           | Cable Route Owner                   |
| C  | CRS | CRS_CRT_STATUS          | Cable Route Status                  |
| C  | CRS | CRS_CRT_STATE           | Cable Route State                   |
| R  | CRS | CRS_CRTLINK_OFF         | Cable Route Default Offset Distance |
| R  | CRS | CRS_CRTSYM_SCL          | Cable Route Symbol Scale            |
| R  | CRS | CRS_CRTNODE_SCL         | Cable Route Node Scale              |
| C  | CRS | CRS_CRTNODE_NFUNC       | Cable Route Node Function           |
| R  | CRS | CRS_SRCH                | Cable Route Search Tolerance        |
| R  | CRS | CRS_CRTLINK_TOL         | Cable Route Tolerance               |
| R  | CRS | CRS_CRTNODE_TOL         | Cable Route Node Tolerance          |
| R  | CRS | CRS_SHORT_OBJECTS       | Short Objects                       |
| R  | CRS | CRS_LBLCRTLINK_TSIZE    | Cable Route Label Height            |
| R  | CRS | CRS_DIM_TSIZE           | Dimension Note Height               |
| R  | CRS | CRS_NOTE_TSIZE          | Note Tag Height                     |
| C  | CRS | CRS_INFRASTRUCTURE_TYPE | Infrastructure Type                 |
| R  | CRS | CRS_CRTINF_VAULTSIZE_W  | Vault Size Width                    |
| R  | CRS | CRS_CRTINF_VAULTSIZE_H  | Vault Size Height                   |

|   |     |                         |                                       |
|---|-----|-------------------------|---------------------------------------|
| R | CRS | CRS_CRTINF_SITESIZE_W   | Site Size Width                       |
| R | CRS | CRS_CRTINF_SITESIZE_H   | Site Size Height                      |
| R | CRS | CRS_CRTINF_DBOXSIZE_W   | Drawbox Size Width                    |
| R | CRS | CRS_CRTINF_DBOXSIZE_H   | Drawbox Size Height                   |
| R | CRS | CRS_CRTINF_PITSIZE_W    | Pit Size Width                        |
| R | CRS | CRS_CRTINF_PITSIZE_H    | Pit Size Height                       |
| R | CRS | CRS_CRTINF_MHSIZE_W     | Manhole Size Height                   |
| R | CRS | CRS_CRTINF_MHSIZE_H     | Manhole Size Height                   |
| R | CRS | CRS_CRTINF_POLESIZE_DIA | Pole Size Diameter                    |
| S | CRS | CRS_CRTNODE_ASKNODEREF  | Node Reference                        |
| R | CRS | CRS_DEF_OFF             | Node Default Offset Distance          |
| R | CRS | CRS_CRTSWCH_OFF         | Switch Node Offset Distance           |
| R | CRS | CRS_CRTMICWV_OFF        | Microwave Tower Node Offset Distance  |
| R | CRS | CRS_CRTDLU_OFF          | DLU Node Offset Distance              |
| R | CRS | CRS_CRTMDF_OFF          | MDF Node Offset Distance              |
| R | CRS | CRS_CRTPRIMJOINT_OFF    | Primary Joint Node Offset Distance    |
| R | CRS | CRS_CRTSDC_OFF          | SDC Node Offset Distance              |
| R | CRS | CRS_CRTSECJOINT_OFF     | Secondary Joint Node Offset Distance  |
| R | CRS | CRS_CRTSCJOINT_OFF      | SC Joint Node Offset Distance         |
| R | CRS | CRS_CRTDP_OFF           | DP Node Offset Distance               |
| R | CRS | CRS_CRTDPSTUBBY_OFF     | DPS Node Offset Distance              |
| R | CRS | CRS_CRTDPAERIAL_OFF     | DPA Node Offset Distance              |
| R | CRS | CRS_CRTDPBUILD_OFF      | DPB Node Offset Distance              |
| R | CRS | CRS_CRTDIGI_OFF         | DIGICON Terminal Node Offset Distance |
| R | CRS | CRS_CRTMSAN_OFF         | MSAN Node Offset Distance             |
| S | CRS | CRS_NODE_SNAP           | Snap Nodes                            |
| S | CRS | CRS_NODE_AUTPLACE       | Automatic Node Placement              |
| S | CRS | CRS_NODE_AUTROT         | Align Nodes with Cadastral            |

|   |     |                     |                                |
|---|-----|---------------------|--------------------------------|
| S | CRS | CRS_CRTINF_NAMENUM  | Infrastructure Prompt Name/Num |
| R | DMS | DMS_CATCH_TSIZE     | Catchment Tag Height           |
| R | DMS | DMS_CHNL_BWIDTH     | Channel Bottom Width           |
| R | DMS | DMS_CHNL_DEPTH      | Channel Depth                  |
| C | DMS | DMS_CHNL_MATRL      | Channel Material               |
| R | DMS | DMS_CHNL_OFF        | Channel Offset Distance        |
| R | DMS | DMS_CHNL_TWIDTH     | Channel Top Width              |
| C | DMS | DMS_CHNL_TYPE       | Channel Type                   |
| R | DMS | DMS_CLVT_DEPTH      | Culvert Depth                  |
| C | DMS | DMS_CLVT_MATRL      | Culvert Material               |
| R | DMS | DMS_CLVT_OFF        | Culvert Offset Distance        |
| C | DMS | DMS_CLVT_TYPE       | Culvert Type                   |
| R | DMS | DMS_CLVT_WIDTH      | Culvert Top Width              |
| R | DMS | DMS_DAM_TSIZE       | Dam Tag Height                 |
| C | DMS | DMS_DAM_TYPE        | Dam Type                       |
| R | DMS | DMS_DIM_TSIZE       | Dimension Note Height          |
| R | DMS | DMS_FLOODL_TSIZE    | Floodline Tag Height           |
| C | DMS | DMS_FLOODL_TYPE     | Floodline Type                 |
| R | DMS | DMS_LBLCHNL_TSIZE   | Channel Label Height           |
| R | DMS | DMS_LBLCLVT_TSIZE   | Culvert Label Height           |
| R | DMS | DMS_LBLSWPIPE_TSIZE | Pipe Label Height              |
| R | DMS | DMS_NOTE_TSIZE      | Note Tag Height                |
| R | DMS | DMS_RIVER_TSIZE     | River Tag Height               |
| C | DMS | DMS_RIVER_TYPE      | River Type                     |
| R | DMS | DMS_SHORT_OBJECTS   | Short Objects                  |
| R | DMS | DMS_SRCH            | Stormwater Search Tolerance    |
| C | DMS | DMS_SWNODE_NFUNC    | Stormwater Node Function       |
| R | DMS | DMS_SWNODE_SCL      | Stormwater Node Scale          |
| R | DMS | DMS_SWNODE_TOL      | Stormwater Node Tolerance      |
| R | DMS | DMS_SWSERV_LEN      | Stormwater Serv Length         |

|     |     |                      |                                    |
|-----|-----|----------------------|------------------------------------|
| R   | DMS | DMS_SWSERV_TOL       | Stormwater Serv Tolerance          |
| C   | DMS | DMS_SWSERV_TYPE      | Stormwater Serv Type               |
| **I | DMS | DMS_SWSERV_LINKMUNID | Stormwater SC Link Mun ID          |
| R   | DMS | DMS_SWSYM_SCL        | Stormwater Symbol Scale            |
| R   | DMS | DMS_SWPIPE_DIA       | Stormwater Pipe Diameter           |
| C   | DMS | DMS_SWPIPE_MATRL     | Stormwater Pipe Material           |
| R   | DMS | DMS_SWPIPE_OFF       | Stormwater Default Offset Distance |
| R   | DMS | DMS_SWPIPE_TOL       | Stormwater Pipe Tolerance          |
| C   | DMS | DMS_SWPIPE_TYPE      | Stormwater Pipe Type               |
| R   | DMS | DMS_SWSYM_SCL        | Stormwater Symbol Scale            |
| S   | EMS | EMS_CABLE_ASKINFO    | Cable Info                         |
| R   | EMS | EMS_CABLE_OFF        | Cable Default Offset Distance      |
| R   | EMS | EMS_CABLE_TIEIN      | Cable Tie-in distance              |
| R   | EMS | EMS_CABLE_TOL        | Electricity Cable Tolerance        |
| R   | EMS | EMS_DCT_FIX          | Cable duct trim or extend          |
| R   | EMS | EMS_DEF_DST          | Default Cable Tie-in distance      |
| C   | EMS | EMS_DEF_MATRL        | Cable material                     |
| R   | EMS | EMS_DEF_OFF          | Node Default Offset Distance       |
| R   | EMS | EMS_DEF_SLK          | Node slack                         |
| R   | EMS | EMS_DIM_TSIZE        | Dimension Note Height              |
| R   | EMS | EMS_EALINK_DST       | Airlink cable tie-in distance      |
| R   | EMS | EMS_EALINK_OFF       | Airlink symbol offset distance     |
| R   | EMS | EMS_EALINK_SLK       | Airlink cable slack                |
| R   | EMS | EMS_EBRD_DST         | Billboard cable tie-in distance    |
| R   | EMS | EMS_EBRD_OFF         | Billboard symbol offset distance   |
| R   | EMS | EMS_EBRD_SLK         | Billboard cable slack              |
| R   | EMS | EMS_EDB_DST          | DB cable tie-in distance           |
| R   | EMS | EMS_EDB_OFF          | DB symbol offset distance          |
| R   | EMS | EMS_EDB_SLK          | DB cable slack                     |
| R   | EMS | EMS_EHMSL_DST        | HMSL cable tie-in distance         |

|   |     |                   |                                        |
|---|-----|-------------------|----------------------------------------|
| R | EMS | EMS_EHMSL_OFF     | HMSL symbol offset distance            |
| R | EMS | EMS_EHMSL_SLK     | HMSL cable slack                       |
| R | EMS | EMS_EHVJUNC_DST   | HV Junction Box cable tie-in distance  |
| R | EMS | EMS_EHVJUNC_OFF   | HV Junction Box symbol offset distance |
| R | EMS | EMS_EHVJUNC_SLK   | HV Junction Box cable slack            |
| R | EMS | EMS_EHVSWITCH_DST | HV Switch cable tie-in distance        |
| R | EMS | EMS_EHVSWITCH_OFF | HV Switch symbol offset distance       |
| R | EMS | EMS_EHVSWITCH_SLK | HV Switch cable slack                  |
| R | EMS | EMS_EKIOSK_DST    | Kiosk cable tie-in distance            |
| R | EMS | EMS_EKIOSK_OFF    | Kiosk symbol offset distance           |
| R | EMS | EMS_EKIOSK_SLK    | Kiosk cable slack                      |
| R | EMS | EMS_ELVJUNC_DST   | LV Junction Box cable tie-in distance  |
| R | EMS | EMS_ELVJUNC_OFF   | LV Junction Box symbol offset distance |
| R | EMS | EMS_ELVJUNC_SLK   | LV Junction Box cable slack            |
| R | EMS | EMS_EM SUB_DST    | Mini Sub cable tie-in distance         |
| R | EMS | EMS_EM SUB_OFF    | Mini Sub symbol offset distance        |
| R | EMS | EMS_EM SUB_SLK    | Mini Sub cable slack                   |
| R | EMS | EMS_EPOLE_DST     | Pole cable tie-in distance             |
| R | EMS | EMS_EPOLE_OFF     | Pole symbol offset distance            |
| R | EMS | EMS_EPOLE_SLK     | Pole cable slack                       |
| R | EMS | EMS_EPYLON_DST    | Pylon cable tie-in distance            |
| R | EMS | EMS_EPYLON_OFF    | Pylon symbol offset distance           |
| R | EMS | EMS_EPYLON_SLK    | Pylon cable slack                      |
| R | EMS | EMS_ESL_DST       | Streetlight cable tie-in distance      |
| R | EMS | EMS_ESL_OFF       | Streetlight symbol offset distance     |
| R | EMS | EMS_ESL_SLK       | Streetlight cable slack                |
| R | EMS | EMS_ESLJUNC_DST   | SL Junction Box cable tie-in distance  |

|   |     |                   |                                         |
|---|-----|-------------------|-----------------------------------------|
| R | EMS | EMS_ESLJUNC_OFF   | SL Junction Box symbol offset distance  |
| R | EMS | EMS_ESLJUNC_SLK   | SL Junction Box cable slack             |
| R | EMS | EMS_ESLPOLE_DST   | Streetlight Pole cable tie-in distance  |
| R | EMS | EMS_ESLPOLE_OFF   | Streetlight Pole symbol offset distance |
| R | EMS | EMS_ESLPOLE_SLK   | Streetlight Pole cable slack            |
| R | EMS | EMS_ESSTA_DST     | Switch Station cable tie-in distance    |
| R | EMS | EMS_ESSTA_OFF     | Switch Station symbol offset distance   |
| R | EMS | EMS_ESSTA_SLK     | Switch Station cable slack              |
| R | EMS | EMS_ESSUB_DST     | Standard Sub cable tie-in distance      |
| R | EMS | EMS_ESSUB_OFF     | Standard Sub symbol offset distance     |
| R | EMS | EMS_ESSUB_SLK     | Standard Sub cable slack                |
| R | EMS | EMS_ETRANS_DST    | Transformer cable tie-in distance       |
| R | EMS | EMS_ETRANS_OFF    | Transformer symbol offset distance      |
| R | EMS | EMS_ETRANS_SLK    | Transformer cable slack                 |
| R | EMS | EMS_ISCALE        | Insertion Scale                         |
| S | EMS | EMS_NODE_ASKDESC  | Node Descriptions                       |
| S | EMS | EMS_NODE_AUTPLACE | Automatic Node Placement                |
| S | EMS | EMS_NODE_AUTROT   | Align nodes with cadastral              |
| S | EMS | EMS_NODE_SNAP     | Snap nodes                              |
| R | EMS | EMS_NODE_TOL      | Electricity Node Tolerance              |
| R | EMS | EMS_NOTE_TSIZE    | Note Tag Height                         |
| S | EMS | EMS_SC_ASKINFO    | Service connection Info                 |
| R | EMS | EMS_SC_LEN        | Service connection length               |
| R | EMS | EMS_SC_TOL        | Electricity SC Tolerance                |
| R | EMS | EMS_SRCH          | Electricity Search Tolerance            |
| R | EMS | EMS_SYM_SCL       | Electricity Symbol Scale                |

|   |     |                        |                                     |
|---|-----|------------------------|-------------------------------------|
| R | EMS | EMS_ZONE_TSIZE         | Zone Tag Height                     |
| I | GEN | DB_EXTENTS_RESOLUTION  | Database Extents Display Resolution |
| C | GEN | DWG_DIR                | Drawing Directory                   |
| S | GEN | INTEG_NETWORK_AUTCHECK | Integrity Network Auto Check        |
| R | GEN | INTEG_CIRCSIZE         | Integrity Circle Size               |
| I | GEN | PRECISION              | Precision                           |
| S | GEN | ROTATE_TRANSFORMED     | Rotate Tag and Symbol               |
| S | GEN | SCALE_TRANSFORMED      | Scale Tag and Symbol                |
| R | GEN | SNAP                   | Snap Tolerance                      |
| A | GEN | TAG_ANGLE              | Tag Angle                           |
| C | GEN | TAG_FNT                | Tag Font                            |
| C | GEN | TAG_JUST               | Tag Justification                   |
| R | GEN | TAG_SIZE               | Tag Height                          |
| C | MBK | MBK_COORDS_FONT        | Font for coordinates                |
| C | MBK | MBK_DATESCALE_FONT     | Font for the Date/Scale             |
| C | MBK | MBK_DIR                | Map Book Drawing Directory          |
| C | MBK | MBK_DWG_PFIX           | Drawing Prefix                      |
| C | MBK | MBK_EVN_PFIX           | Even Page Prefix                    |
| C | MBK | MBK_FONT               | Map Book Font                       |
| C | MBK | MBK_ODD_PFIX           | Odd Page Prefix                     |
| C | MBK | MBK_PAGENO_FONT        | Font for Page Number                |
| C | MBK | MBK_TITLE_FONT         | Font for Title                      |
| R | MBK | MBK_XORD_FACT          | X Coordinate Multiplication Factor  |
| R | MBK | MBK_YORD_FACT          | Y Coordinate Multiplication Factor  |
| R | RMS | RMS_ISCALE             | Insertion Scale                     |
| R | RMS | RMS_NOTE_TSIZE         | Road Note Height                    |
| C | RMS | RMS_RDCL_CLASS         | Road CL Classification              |
| C | RMS | RMS_RDCL_JURIS         | Road CL Jurisdiction                |
| R | RMS | RMS_RDCL_OFF           | Road CL Offset Distance             |

|   |     |                    |                                          |
|---|-----|--------------------|------------------------------------------|
| C | RMS | RMS_RDCL_OWNER     | Road CL Segment Owner                    |
| C | RMS | RMS_RDCL_SURFACE   | Road CL Surface Type                     |
| R | RMS | RMS_RDCL_TOL       | Road CL Tolerance                        |
| C | RMS | RMS_RDCL_TRAFDIR   | Road CL Traffic Direction                |
| C | RMS | RMS_RDCL_TYPE      | Road CL Segment Type                     |
| R | RMS | RMS_RDEGE_OFF      | Road Edge Offset Distance                |
| R | RMS | RMS_RDINT_TOL      | Road Int Tolerance                       |
| R | RMS | RMS_RDINTSYM_SCL   | Intersection Marker Symbol Scale         |
| R | RMS | RMS_RDTSYM_SCL     | Traffic Symbol Scale                     |
| R | RMS | RMS_RDWALK_OFF     | Road Walkway Offset Distance             |
| R | RMS | RMS_SHORT_OBJECTS  | Short Objects                            |
| R | RMS | RMS_SRCH           | Road Search Tolerance                    |
| R | SMS | SMS_BASIN_TSIZE    | Basin Tag Height                         |
| R | SMS | SMS_DIM_TSIZE      | Dimension Note Height                    |
| R | SMS | SMS_GPIPE_DIA      | Gravity Pipe diameter                    |
| C | SMS | SMS_GPIPE_MATRL    | Gravity Pipe Material                    |
| R | SMS | SMS_GPIPE_OFF      | Gravity Pipe Default Offset Distance     |
| C | SMS | SMS_GPIPE_TYPE     | Gravity Pipe Type                        |
| R | SMS | SMS_LBLGPIPE_TSIZE | Gravity Pipe Label Height                |
| R | SMS | SMS_LBLRPIPE_TSIZE | Pressure Pipe Label Height               |
| R | SMS | SMS_LBLVPIPE_TSIZE | Vacuum Pipe Label Height                 |
| R | SMS | SMS_NOTE_TSIZE     | Note Tag Height                          |
| R | SMS | SMS_RESPIPE_OFF    | Residential Pipe Default Offset Distance |
| R | SMS | SMS_RPIPE_DIA      | Pressure Pipe diameter                   |
| C | SMS | SMS_RPIPE_MATRL    | Pressure Pipe Material                   |
| R | SMS | SMS_RPIPE_OFF      | Pressure Pipe Default Offset Distance    |
| C | SMS | SMS_RPIPE_TYPE     | Pressure Pipe Type                       |
| R | SMS | SMS_SEWNODE_SCL    | Sewer Node Scale                         |

|   |     |                       |                                     |
|---|-----|-----------------------|-------------------------------------|
| R | SMS | SMS_SEWNODE_TOL       | Sewer Node Tolerance                |
| R | SMS | SMS_SEWPIPE_TOL       | Sewer Pipe Tolerance                |
| R | SMS | SMS_SEWSERV_LEN       | Sewer Serv Length                   |
| R | SMS | SMS_SEWSERV_TOL       | Sewer Serv Tolerance                |
| C | SMS | SMS_SEWSERV_TYPE      | Sewer Serv Type                     |
| R | SMS | SMS_SEWSYM_SCL        | Sewer Symbol Scale                  |
| R | SMS | SMS_SHORT_OBJECTS     | Short Objects                       |
| R | SMS | SMS_SRCH              | Sewer Search Tolerance              |
| R | SMS | SMS_VPIPE_DIA         | Vacuum Pipe diameter                |
| C | SMS | SMS_VPIPE_MATRL       | Vacuum Pipe Material                |
| R | SMS | SMS_VPIPE_OFF         | Vacuum Pipe Default Offset Distance |
| C | SMS | SMS_VPIPE_TYPE        | Vacuum Pipe Type                    |
| R | WMS | WMS_DIM_TSIZE         | Dimension Note Height               |
| R | WMS | WMS_LBLWATPIPE_TSIZE  | Pipe Label Height                   |
| R | WMS | WMS_NOTE_TSIZE        | Note Tag Height                     |
| R | WMS | WMS_SHORT_OBJECTS     | Short Objects                       |
| R | WMS | WMS_SRCH              | Water Search Tolerance              |
| R | WMS | WMS_WAT_CAT           | Water Category                      |
| R | WMS | WMS_WATBRCH_OFF       | Water branch offset                 |
| C | WMS | WMS_WATNODE_NFUNC     | Water Node Function                 |
| R | WMS | WMS_WATNODE_SCL       | Water Node Scale                    |
| R | WMS | WMS_WATNODE_TOL       | Water Node Tolerance                |
| R | WMS | WMS_WATPIPE_DIA       | Water Pipe Diameter                 |
| C | WMS | WMS_WATPIPE_MATRL     | Water Pipe Material                 |
| R | WMS | WMS_WATPIPE_OFF       | Water Default Offset Distance       |
| R | WMS | WMS_WATPIPE_TOL       | Water Pipe Tolerance                |
| C | WMS | WMS_WATPIPE_TYPE      | Water Pipe Type                     |
| R | WMS | WMS_WATSERV_LEN       | Water serv Length                   |
| I | WMS | WMS_WATSERV_LINKMUNID | Water SC Link Mun ID                |

|   |     |                 |                                    |
|---|-----|-----------------|------------------------------------|
| R | WMS | WMS_WATSERV_OFF | Water serv Default Offset Distance |
| R | WMS | WMS_WATSERV_TOL | Water Serv Tolerance               |
| R | WMS | WMS_WATSYM_SCL  | Water Symbol Scale                 |
| R | WMS | WMS_ZONE_TSIZE  | Zone Tag Height                    |

\*International version only; \*\*US version only

## Munsys System Variables

The following system variables are used by MUN-UTL-SETMUNVAR and MUN-UTL-GETMUNVAR:

### Integrity Variables

| Variable         | Values                | Description                                    |
|------------------|-----------------------|------------------------------------------------|
| MUNINTDELMARKERS | ON/OFF<br>Default: ON | Erase integrity markers at start of operation  |
| MUNINTDLGRESULTS | ON/OFF<br>Default: ON | Show integrity result summary dialog           |
| MUNINTDLGNOTIFY  | ON/OFF<br>Default: ON | Notify when objects require network validation |

### Database Posting Variables

| Variable            | Values                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MUNPSTDLGSUMMARY    | ON/OFF<br>Default: ON | Show posting summary dialog                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| MUNPSTDLGRESULTS    | ON/OFF<br>Default: ON | Show posting results dialog                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| MUNPSTLCKAUTOUNLOCK | ON/OFF<br>Default: ON | Auto-unlock objects after posting                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| MUNPSTUNDORESET     | ON/OFF<br>Default: ON | After posting objects to the database the undo will be cleared to avoid synchronization problems between the content of a drawing and the content in the database. Using the MUNPOSTOBS command in a lisp routine will cause an error because of the nested function to clear the undo if it is called multiple times. This variable will avoid this error. It should only be switched OFF in a situation where a LISP routine is calling the MUNPOSTOBS command multiple times. |

### ToolTip Variables

| Variable        | Values                 | Description                       |
|-----------------|------------------------|-----------------------------------|
| MUNTIPSHOW      | ON/OFF<br>Default: ON  | Show object description           |
| MUNTIPOBJGID    | ON/OFF<br>Default: OFF | Show object GID                   |
| MUNTIPOBJMODIFY | ON/OFF<br>Default: OFF | Show object modified status       |
| MUNTIPOBJATTR   | ON/OFF<br>Default: OFF | Show modified attributes          |
| MUNTIPINTMARKER | ON/OFF<br>Default: ON  | Show integrity marker information |

### Color Variables

| Variable           | Values                                                             | Description        |
|--------------------|--------------------------------------------------------------------|--------------------|
| MUNCOLCONSTRUCTION | Integer or string representing color index<br>Default: 6 - Magenta | Construction Color |
| MUNCOLINTEGRITY    | Integer or string representing color index<br>Default: 3 - Green   | Integrity Color    |

### Geometry Validation Variables

| Variable           | Values                                | Description       |
|--------------------|---------------------------------------|-------------------|
| MUNINTGEOMVALIDATE | OFF/MODIFIED/ALL<br>Default: MODIFIED | Validate Geometry |



### Attribute Validation Variables

| Variable           | Values                                | Description        |
|--------------------|---------------------------------------|--------------------|
| MUNINTATTRVALIDATE | OFF/MODIFIED/ALL<br>Default: MODIFIED | Validate Attribute |

### Network Integrity Variables

| Variable           | Values                | Description           |
|--------------------|-----------------------|-----------------------|
| MUNINTTOPOVALIDATE | ON/OFF<br>Default: ON | Validate Topology     |
| MUNINTCONNVALIDATE | ON/OFF<br>Default: ON | Validate Connectivity |



## Chapter 4

### Munsys Objects

#### DXF Codes

The following dxf codes are specific to the Munsys objects such as MUNLABEL, MUNPOINT, MUNLINE, MUNPOLY.

| DXF Group Code | DESCRIPTION                  |
|----------------|------------------------------|
| 75             | Munsys Status Flags          |
| 95             | Munsys ID                    |
| 96             | Spatial Object GID           |
| 97             | Attributes – used internally |

# Chapter 5

## Command Line Functions

### MUNQRYEXEC

Allows you to run and change a query dynamically from the command line interface.

Query ID to Execute:

- The default queries are as follows. To obtain queries not listed below, please refer to the MUNSYS\_QUERY table:

| Query ID | Description           |
|----------|-----------------------|
| *1       | Townships             |
| *2       | Townships (Archived)  |
| 3        | Parcels               |
| 4        | Parcels (Archived)    |
| *5       | Suburbs               |
| *6       | Block Boundaries      |
| *7       | Wards                 |
| 8        | Street Name           |
| 9        | Street Addresses      |
| 10       | Easement Lines        |
| 11       | Easement Line Text    |
| 12       | TP Zoning             |
| 13       | TP Density            |
| 14       | Easement Polygons     |
| 15       | Easement Polygon Text |
| 16       | Buildings             |
| 17       | Cadastral Notes       |
| **18     | Municipalities        |
| 19       | TP Land Use           |
| 20       | Sewer Labels          |
| 21       | Sewer Dimensions      |
| 22       | Sewer Basins          |

|     |                              |
|-----|------------------------------|
| 23  | Sewer Nodes                  |
| 24  | Sewer Notes                  |
| 25  | Sewer Pipes (Gravity)        |
| 26  | Sewer SCs                    |
| 27  | Sewer Pipes (Vacuum)         |
| 28  | Sewer Pipes (Pressure)       |
| 29  | Sewer Residential Pipes      |
| 33  | Sewer Dimension Notes        |
| 34  | Sewer Symbols                |
| 35  | Sewer Map Page Grid          |
| 41  | Water Dimensions             |
| 42  | Water Zones                  |
| 43  | Water Nodes                  |
| 44  | Water Notes                  |
| 45  | Water Pipes                  |
| 46  | Water SCs                    |
| 47  | Water Residential Pipes      |
| 48  | Water Pipe Labels            |
| 49  | Water Dimension Notes        |
| 50  | Water Symbols                |
| 51  | Water Map Page Grid          |
| 401 | Water Dimensions (Potable)   |
| 402 | Water Dimensions (Reclaimed) |
| 403 | Water Dimensions (Abandoned) |
| 404 | Water Dimensions (Raw)       |
| 405 | Water Zones (Potable)        |
| 406 | Water Zones (Reclaimed)      |
| 407 | Water Zones (Abandoned)      |
| 408 | Water Zones (Raw)            |
| 409 | Water Nodes (Potable)        |

|     |                                   |
|-----|-----------------------------------|
| 410 | Water Nodes (Reclaimed)           |
| 411 | Water Nodes (Abandoned)           |
| 412 | Water Nodes (Raw)                 |
| 413 | Water Notes (Potable)             |
| 414 | Water Notes (Reclaimed)           |
| 415 | Water Notes (Abandoned)           |
| 416 | Water Notes (Raw)                 |
| 417 | Water Pipes (Potable)             |
| 418 | Water Pipes (Reclaimed)           |
| 419 | Water Pipes (Abandoned)           |
| 420 | Water Pipes (Raw)                 |
| 421 | Water SCs (Potable)               |
| 422 | Water SCs (Reclaimed)             |
| 423 | Water SCs (Abandoned)             |
| 424 | Water SCs (Raw)                   |
| 429 | Water Pipe Labels (Potable)       |
| 430 | Water Pipe Labels (Reclaimed)     |
| 431 | Water Pipe Labels (Abandoned)     |
| 432 | Water Pipe Labels (Raw)           |
| 433 | Water Dimension Notes (Potable)   |
| 434 | Water Dimension Notes (Reclaimed) |
| 435 | Water Dimension Notes (Abandoned) |
| 436 | Water Dimension Notes (Raw)       |
| 437 | Water Symbols (Potable)           |
| 438 | Water Symbols (Reclaimed)         |
| 439 | Water Symbols (Abandoned)         |
| 440 | Water Symbols (Raw)               |
| 60  | Stormwater Labels                 |
| 61  | Stormwater Dimensions             |
| 62  | Stormwater Catchments             |

|     |                               |
|-----|-------------------------------|
| 63  | Stormwater Nodes              |
| 64  | Stormwater Notes              |
| 65  | Stormwater Pipes              |
| 66  | Stormwater Channels           |
| 67  | Stormwater Culverts           |
| 68  | River Lines                   |
| 69  | River Polygons                |
| 70  | Floodlines                    |
| 71  | Dams                          |
| 72  | Stormwater Pipe Labels        |
| 73  | Stormwater Channel Labels     |
| 74  | Stormwater Culvert Labels     |
| 75  | Stormwater Dimension Notes    |
| 76  | Stormwater SCs                |
| 77  | Stormwater Symbols            |
| 78  | Stormwater Map Page Grid      |
| 81  | Road Centre Lines             |
| 82  | Road Intersections            |
| 83  | Road Walkways                 |
| 84  | Road Areas                    |
| 85  | Road Edges                    |
| 86  | Road Notes                    |
| 101 | Electricity Cables            |
| 102 | Electricity Nodes             |
| 103 | Electricity Ducts             |
| 104 | Electricity Transformer Zones |
| 105 | Electricity Notes             |
| 106 | Electricity Dimensions        |
| 107 | Electricity SCs               |
| 108 | Electricity Dimension Notes   |

|     |                                  |
|-----|----------------------------------|
| 109 | Electricity Cables (EHV)         |
| 110 | Electricity Cables (HV)          |
| 111 | Electricity Cables (LV)          |
| 112 | Electricity Cables (SL)          |
| 113 | Electricity Cables (SC)          |
| 114 | Electricity Nodes (EHV)          |
| 115 | Electricity Nodes (HV)           |
| 116 | Electricity Nodes (LV)           |
| 117 | Electricity Nodes (SL)           |
| 118 | Electricity Nodes (SC)           |
| 141 | Cable Route Links                |
| 142 | Cable Route Nodes                |
| 143 | Cable Route Notes                |
| 144 | Cable Route Dimensions           |
| 145 | Cable Route Symbols              |
| 146 | Cable Route Labels               |
| 147 | Cable Route Dimension Notes      |
| 148 | Cable Route Infrastructure       |
| 161 | Fiber Cables                     |
| 162 | Fiber Paths                      |
| 163 | Cable Fiber Notes                |
| 164 | Cable Fiber Dimensions           |
| 165 | Cable Fiber Symbols              |
| 166 | Cable Fiber Dimension Notes      |
| 167 | Cable Fiber Service Connections  |
| 171 | Qry: Fiber Cable by Type         |
| 172 | Qry: Fiber Path by Service       |
| 173 | Qry: Fiber Strand Count (In Use) |

\*International version only; \*\*US version only

Parameter to Change <none>:

| Parameter Name | Parameter Description                                                                                                                                            |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Gscmode        | A number indicating whether to use a GSC for the current query.<br>(0 = no GSC, 1 = use GSC)                                                                     |
| qryTxt         | A number indicating whether to query text.<br>(0 = no, 1 = yes)                                                                                                  |
| objFmt         | A number indicating how the object should be formatted.<br>Supports only the following values now:<br>1 – MUNLABEL<br>2 – MUNPOINT<br>3 – MUNLINE<br>4 – MUNPOLY |
| objColor       | Indicates the color for the geometry – NULL implies BYLAYER.                                                                                                     |
| objAngle       | Object angle. See <a href="#">Format Options</a> for valid values. (# = default)                                                                                 |
| objBulge       | Object bulge factor. See <a href="#">Format Options</a> for valid values.                                                                                        |
| objElev        | Object elevation. See <a href="#">Format Options</a> for valid values.                                                                                           |
| objLayer       | Object layer. See <a href="#">Format Options</a> for valid values. (# = default)                                                                                 |
| objScale       | Object scale. See <a href="#">Format Options</a> for valid values. (# = default)                                                                                 |
| objThick       | Object thickness. See <a href="#">Format Options</a> for valid values.                                                                                           |
| objWidth       | Object width. See <a href="#">Format Options</a> for valid values.                                                                                               |
| objBLock       | Indicates whether to query object as a block object<br>(0 = No, 1 = Yes).                                                                                        |
| txTAngle       | Text angle. See <a href="#">Format Options</a> for valid values. (# = default)                                                                                   |
| txTColor       | Indicates the color for the label – NULL implies BYLAYER.                                                                                                        |
| txTElev        | Text elevation. See <a href="#">Format Options</a> for valid values.                                                                                             |
| txTJust        | Text justification. See <a href="#">Format Options</a> for valid values. (# = default)                                                                           |
| txTLayer       | Text layer. See <a href="#">Format Options</a> for valid values. (# = default)                                                                                   |
| txTHeight      | Text size. See <a href="#">Format Options</a> for valid values. (# = default)                                                                                    |
| txTStyle       | Text style. See <a href="#">Format Options</a> for valid values.                                                                                                 |
| txTValue       | Text value. See <a href="#">Format Options</a> for valid values. (# = default)                                                                                   |
| aTTable        | A string indicating the name of an optional attribute table to join for the query.                                                                               |

|             |                                                                                                                                                                 |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| aTTCond     | A string indicating an additional WHERE clause to be used in the query.                                                                                         |
| sPJoincol   | ***The column to join the spatial table on. This will be included in the WHERE clause when joining the tables.                                                  |
| aTTJoincol  | ***The column to join the attribute table on. This will be included in the WHERE clause when joining the tables.                                                |
| fiLLMode    | 0 – no fill<br>1 – apply a fill (only when objFmt = 4)                                                                                                          |
| fiLLType    | Indicates the pattern type either Custom or Predefined.<br>Used only if fiLLMode = 1 and fiLLPatt refers to a hatch pattern (not a solid)                       |
| fiLLColor   | Indicates the color for the fill – NULL implies BYLAYER.<br>Used only if fiLLMode = 1.                                                                          |
| fiLLPatt    | Name of fill pattern – NULL implies SOLID.<br>Used only if fiLLMode = 1.                                                                                        |
| fiLLAngle   | Hatch angle in radians. Used only if fiLLMode = 1 and fiLLPatt does not refer to a solid.                                                                       |
| fiLLScale   | Hatch scale. Used only if fiLLMode = 1 and fiLLPatt refers to a hatch pattern (not a solid).                                                                    |
| fiLLSpace   | Indicates the size of the hatch spacing. Used only if fiLLMode = 1 and fiLLPatt refers to a hatch pattern (not a solid)                                         |
| fiLLDouble  | Can either be Double or Cross. Used only if fiLLMode = 1 and fiLLPatt refers to a hatch pattern (not a solid)                                                   |
| ranGEMode   | Specifies how to create entity layer:<br>0 specifies to use the name as from objLayer<br>1 to create a range of layers using parameters from the ran parameters |
| ranGEColum  | Column being evaluated for range of layers.<br>Used when ranGEMode = 1.                                                                                         |
| ranGEGroups | Number of groups to split range into                                                                                                                            |
| ranGEDec    | Digits after decimal point – used to convert numeric value to a string                                                                                          |
| ranGEMIN    | Indicates Start of Range                                                                                                                                        |
| ranGEMAX    | Column being evaluated for range of layers. Used when ranGEMode = 1. Indicates End of Range                                                                     |



## Chapter 6

### Format Options



### Format Options

The following format options can be used for queries and expressions in Munsys.

# = default

\$ = SQL expression. This will enable the user to define SQL expressions to evaluate as in -  
`$'PARCEL' || '_' || PRCL_TYPE`

**Important** There is a 128 character limit when passing strings from lisp to the MUNQRYEXEC command. To solve this limitation, simply pass the string as a variable prefixed with "!", as seen in the example below:

If the string is less than 128 characters, then you can use a normal lisp variable:  
`(command "munqryexec" "3" "Gscmode" 0 "atTCond" #QRYCOND "")`

If the string is more than 128 characters, then you will have to use:  
`(command "munqryexec" "3" "Gscmode" 0 "atTCond" " !#QRYCOND" "")`

## Chapter 7

### API Functions



## SPO FUNCTIONS

### MUN-SPO-CLRINTEGFLAG

Clears the integrity flag for a Munsys object.

(mun-spo-clrintegflag *ename*)

#### Arguments

*ename*

Name of the entity whose integrity flag you wish to clear.

#### Return Values

None

#### Examples

**Command:** (setq *ename* (entsel))

**Command:** (mun-spo-clrintegflag (car *ename*))

## MUN-SPO-GETATTRIBUTE

Retrieves column values for object.

```
(mun-spo-getattribute ename column_list)
```

### Arguments

*ename*

Name of the entity whose attributes you wish to retrieve.

*column\_list*

List of column name whose values you wish to retrieve.

### Return Values

List of column values, as strings, corresponding to the *column\_list* otherwise returns nil.

### Examples

```
Command: (mun-spo-getattribute (car (entsel))  
  (list "GID" "TAG_VALUE")  
  ("13535" "FERNDALE"))
```

## MUN-SPO-GETGID

Gets the GID for a Munsys object.

(mun-spo-getgid *ename*)

### Arguments

*ename*

Name of the entity whose GID you wish to retrieve.

### Return Values

GID of object as an integer number otherwise returns 0 if no GID.

### Examples

**Command:** (mun-spo-getgid (car (entsel)))  
**12537**

## MUN-SPO-GETMUNID

Gets the MUNID for a Munsys object.

(mun-spo-getmunid *ename*)

### Arguments

*ename*

Name of the entity whose MUNID you wish to retrieve.

### Return Values

MUNID of object as an integer number otherwise returns 0 if no MUNID.

### Examples

**Command:** (mun-spo-getmunid (car (entsel)))  
**3**

## MUN-SPO-GETTAGANGLE

Gets the tag angle for a Munsys object. The value will be retrieved from the object in the drawing and not from the TAG\_ANGLE column in the database.

(mun-spo-gettagangle ename)

### Arguments

*ename*

Entity name of object to retrieve tag angle from.

### Return Values

Returns angle for the tag as a real number in radians.

### Examples

**Command:** (setq ename (car (entsel)))

**Command:** (mun-spo-gettagangle ename)

**1.579**

## MUN-SPO-GETTAGJUST

Gets the tag justification for a Munsys object. The value will be retrieved from the object in the drawing and not from the TAG\_JUST column in the database.

(mun-spo-gettagjust *ename*)

### Arguments

*ename*

Entity name of object to retrieve tag justification from.

### Return Values

Returns justification for the tag as a string. Valid values are:

L – Left

C – Center

M – Middle

R – Right

TL – Top Left

TC – Top Center

TR – Top Right

ML – Middle Left

MC – Middle Center

MR – Middle Right

BL – Bottom Left

BC – Bottom Center

BR – Bottom Right

### Examples

**Command:** (setq *ename* (car (entsel)))

**Command:** (mun-spo-gettagjust *ename*)

"MC"

## MUN-SPO-GETTAGSIZE

Gets the tag size for a Munsys object. The value will be retrieved from the object in the drawing and not from the TAG\_SIZE column in the database.

(mun-spo-gettagsize ename)

### Arguments

*ename*

Entity name of object to retrieve tag size from.

### Return Values

Returns size for the tag as a real number.

### Examples

**Command:** (setq ename (car (entsel)))

**Command:** (mun-spo-gettagsize ename)

**2.0**

## MUN-SPO-GETTAGSTYLE

Gets the tag style for a Munsys object. The value will be retrieved from the object in the drawing.

(mun-spo-gettagstyle *ename*)

### Arguments

*ename*

Entity name of object to retrieve tag style from.

### Return Values

Returns style for the tag as a string.

### Examples

**Command:** (setq *ename* (car (entsel)))

**Command:** (mun-spo-gettagstyle *ename*)  
"STANDARD"

## MUN-SPO-GETTAGVALUE

Gets the tag value for a Munsys object. The value will be retrieved from the object in the drawing and not from the TAG\_VALUE column in the database.

(mun-spo-gettagvalue *ename*)

### Arguments

*ename*

Entity name of object to retrieve tag value from.

### Return Values

Returns the tag value as a string.

### Examples

**Command:** (setq *ename* (car (entsel)))

**Command:** (mun-spo-gettagvalue *ename*)

"MY TAG"

## MUN-SPO-GETTAGXY

Gets the tag xy coordinate point for a Munsys object.

(mun-spo-gettagxy ename)

### Arguments

*ename*

Entity name of object to retrieve tag xy point from.

### Return Values

XY Coordinate as a point

### Examples

**Command:** (setq ename (car (entsel)))

**Command:** (mun-spo-gettagxy ename)  
(-77588.5 -2.88402e+006 0.0)

## MUN-SPO-REPLACEGEOMETRY

This function replaces the geometry of a Munsys object with that of a CAD entity that is of the same compatible type.

The list of compatible types is as follows:

- MUNPOLY—Closed LWPOLYLINE, MPOLYGON
- MUNLINE—LWPOLYLINE, LINE
- MUNPOINT—POINT, TEXT, BLOCK
- MUNLABEL—TEXT

(mun-spo-replacegeometry *ename* *cad\_ename*)

### Arguments

*ename*

Name of the entity whose geometry you wish to replace.

*cad\_ename*

Name of the CAD entity whose geometry you wish to use.

### Return Values

T if successful or nil otherwise

### Examples

**Command:** (setq *ename* (car (entsel)))

**Command:** (setq *cad\_ename* (car (entsel)))

**Command:** (mun-spo-replacegeometry *ename* *cad\_ename*)

**T**

## MUN-SPO-SETATTRIBUTE

Attaches column values to object for posting to database.

(mun-spo-setattribute *ename* *column\_names* *column\_values*)

### Arguments

*ename*

Name of the entity to update.

*column\_names*

List of strings containing the columns to update.

*column\_values*

List of strings containing the values to update the *column\_names* with.

### Return Values

Returns T if successful or nil otherwise.

### Examples

**Command:** (setq #FLST (list "PIPE\_TYPE"))

**Command:** (setq ENT (car (entsel)))

**Command:** (setq #DLST (list "PRESSURE"))

**Command:** (mun-spo-setattribute ENT #FLST #DLST)

**T**

## MUN-SPO-SETTAGANGLE

Sets the tag angle for a Munsys object. Please note that the column TAG\_ANGLE will be attached to the object as an attribute update. The object tag angle in the drawing will also be updated

```
(mun-spo-settagangle ename tag_angle)
```

### Arguments

*ename*

Name of the entity whose tag angle you wish to update.

*tag\_angle*

New angle for tag, as a real number in radians.

### Return Values

Returns T if successful or nil otherwise

### Examples

**Command:** (mun-spo-settagangle (car (entsel)) 1.579))  
**T**

## MUN-SPO-SETTAGJUST

Sets the tag justification for a Munsys object.

(mun-spo-settagjust *ename* *tag\_justification*)

### Arguments

*ename*

Name of the entity whose tag justification you wish to update.

*tag\_justification*

New justification for tag, as a string. Valid values are:

L – Left

C – Center

M – Middle

R – Right

TL – Top Left

TC – Top Center

TR – Top Right

ML – Middle Left

MC – Middle Center

MR – Middle Right

BL – Bottom Left

BC – Bottom Center

BR – Bottom Right

### Return Values

Returns T if successful or nil otherwise.

### Examples

**Command:** (mun-spo-settagjust (car (entsel)) "MC")

T

## MUN-SPO-SETTAGSIZE

Sets the tag size for a Munsys object. Please note that the column TAG\_SIZE will be attached to the object as an attribute update. The object tag size in the drawing will also be updated.

(mun-spo-settagsize *ename* *tag\_size*)

### Arguments

*ename*

Name of the entity whose tag size you wish to update.

*tag\_size*

New size for tag, as a real number.

### Return Values

Returns T if successful or nil otherwise.

### Examples

**Command:** (mun-spo-settagsize (car (entsel)) 2.0))  
**T**

## MUN-SPO-SETTAGSTYLE

Sets the tag style for a Munsys object

```
(mun-spo-settagstyle ename tag_style)
```

### Arguments

*ename*

Name of the entity whose tag style you wish to update.

*tag\_style*

New style for tag, as a string.

### Return Values

Returns T if successful or nil otherwise.

### Examples

**Command:** (mun-spo-settagstyle (car (entsel)) "STANDARD"))

**T**

## MUN-SPO-SETTAGVALUE

Sets the tag value for a Munsys object. Please note that the column TAG\_VALUE will be attached to the object as an attribute update. The object tag value in the drawing will also be updated.

```
(mun-spo-settagvalue ename tag_value)
```

### Arguments

*ename*

Name of the entity whose tag value you wish to update.

*tag\_value*

New value for tag, as a string.

### Return Values

Returns T if successful or nil otherwise.

### Examples

**Command:** (mun-spo-settagvalue (car (entsel)) "MY TAG"))  
**T**

## DB FUNCTIONS

### MUN-DB-COMMIT

Commits any open transactions to the database.

`(mun-db-commit)`

#### Return Values

Returns T if successful or nil otherwise.

#### Examples

**Command:** `(mun-db-commit)`

T

## MUN-DB-GETLOOKUP

Display lookup dialog and returns selected value/s.

(mun-db-getlookup table\_name dialog\_description selection\_num selected\_column selected\_row [is\_numeric])

### Arguments

*table\_name*

Name of lookup table as a string.

*dialog\_description*

Description of the dialog as a string. This is the text that is displayed in the title bar of the lookup dialog.

*selection\_num*

This value determines how many values the user is allowed to select in the lookup dialog as an integer number.

*selected\_column*

If the dialog must preselect a value when opening the dialog, then this value is the value of the column whose value is passed in selected\_row as a integer value. Columns are 0 based indexed.

*selected\_row*

This is the value of the preselected row to display as a string value.

*is\_numeric*

Optional parameter indicating whether the value of the preselected row is a numeric value. Valid values for this parameter are either T or nil.

### Return Values

List of values selected.

### Examples

**Command:** (mun-db-getlookup "LU\_CMS\_PRCLTYPE" "My Lookup" 1 1 "")  
(("R") ("Registered"))

**Command: (mun-db-getlookup "LU\_SMS\_PIPEdia" "My Lookup" 1 0 "4" T)  
(("4") (" 4"))**

## MUN-DB-GETLOOKUPVALS

Returns lookup table values as 2 separate lists. First list consisting of the LCODE values and the second list consisting of the LVALUE values.

(mun-db-getlookupvals table\_name)

### Arguments

*table\_name*

Name of lookup table as a string.

### Return Values

List consisting of 2 sublists – ((lcode values)(lvalue values))

### Examples

**Command: (mun-db-getlookupvals "LU\_CMS\_SUBNAME")**  
**((("1981" "0680" "0500" "0200" "0180" "0150" "0050" "0020" "0015" "0010"**  
**"0007"**  
**"0006" "0004" "0003" "0002" "0001" "0000") ("KLIPFONTEIN 35-IR" "NIR-**  
**VANA"**  
**"WESTENBURG" "HAMBERG" "TREESBANK A/H" "ROCKY CREST"**  
**"FAIRVIEW" "OLYMPIA" "HOCHLAND PARK" "CONSTANTIA**  
**A/H" "RANDPARK" "GREYMONT" "KENSINGTON" "IVYDALE"**  
**"ISANDO" "CHARTWELL A/H" "UNKNOWN"))**

## MUN-DB-GETNEXTSEQ

Gets next sequence number from the database.

```
(mun-db-getnextseq sequence_name)
```

### Arguments

*sequence\_name*

Sequence name, as a string, of the sequence whose value you wish to retrieve.

### Return Values

Next sequence number as an integer value or nil if sequence does not exist.

### Examples

**Command:** (mun-db-getnextseq "SMS\_SEWNODE")  
**6285**

## MUN-DB-GETSQL

Executes SQL statement and returns results as a list.

```
(mun-db-getsql sql_statement)
```

### Arguments

*sql\_statement*

String containing SQL statement to execute on database.

### Return Values

List consisting of results.

### Examples

```
Command: (mun-db-getsql (strcat "select * from "#MSHEMA ".LU_CMS_-
SUBNAME"))
(("0000" "UNKNOWN") ("0001" "CHARTWELL A/H") ("0002" "ISANDO")
("0003"
"IVYDALE") ("0004" "KENSINGTON") ("0006" "GREYMONT") ("0007"
"RANDPARK") ("0010" "CONSTANTIA A/H") ("0015" "HOCHLAND
PARK") ("0020" "OLYMPIA") ("0050""FAIRVIEW") ("0150"
"ROCKY CREST") ("0180" "TREESBANK A/H") ("0200" "HAM-
BERG") ("0500" "WESTENBURG") ("0680" "NIRVANA") ("1981"
"KLIPFONTEIN 35-IR"))
```

## MUN-DB-INEXTENTS

Determines if a list of points fall within the database extents.

```
(mun-db-inextents point_lst)
```

### Arguments

*point\_list*

List of points or this can be a single point.

### Return Values

T if all the points fall within the database extents or nil otherwise.

### Examples

**Command:** (mun-db-inextents (list (list -75877.706 -2882642.686 0.0) (list -75771.080 -2882578.395 0.0)))

**T**

## MUN-DB-ISCONNECTED

Determines if user is connected to the database or not.

(mun-db-isconnected)

### Return Values

T if connected to the database or nil otherwise.

### Examples

**Command:** (mun-db-isconnected)

**T**

## **MUN-DB-RESET**

Resets application session variables

(mun-db-reset)

### **Return Values**

Returns T if successful or nil otherwise.

### **Examples**

**Command: (mun-db-reset)**

**T**

## MUN-DB-SETSQL

Executes SQL statement on database – SQL statement usually consists of insert or delete statements

(mun-db-setsql sql\_statement)

### Arguments

*sql\_statement*

String containing SQL statement to execute on database

### Return Values

Returns T if successful or nil otherwise.

### Examples

**Command:** (mun-db-setsql (strcat "delete from "#MSHEMA ".LU\_CMS\_-  
SUBNAME"))

**T**

## UTL FUNCTIONS

### MUN-UTL-ACADANGLE

Converts true radian angle to the current AutoCAD Setting units.

(mun-utl-acadangle angle)

#### Arguments

*angle*

Angle in radians as a real value.

#### Return Values

Returns angle as a string value.

#### Examples

**Command: (mun-utl-acadangle 1.57)**  
**"89.954"**

## MUN-UTL-BOUNDARYOFFSET

Offsets boundary segments and constructs polyline object.

(mun-utl-boundaryoffset multiply\_value)

### Arguments

multiply\_value

This is the distance the default offset distance is multiplied by.

### Return Values

Returns entity name of newly constructed object.

### Examples

**Command: (mun-utl-boundaryoffset 1.0)**

**Select offset segment:**

**Specify point on side to offset:**

**Multiply offset by <1.000>:**

**Select offset segment:**

**Done selecting offset segments [Yes/No] <Yes>:**

**<Entity name: 7efdec40>**

## MUN-UTL-CAPNODE

Captures node and breaks entity if requested.

(mun-utl-capnode mun\_id ename point insertion\_type break\_entity insertion\_angle symbol\_name symbol\_scale)

### Arguments

*mun\_id*

Munsys Spatial ID as an integer. This is the Munsys ID of the Node that is being inserted.

*ename*

Name of the entity that you wish to insert the node on.

*point*

Point entity that you wish to insert the node on.

*insertion\_type*

Valid values are, as string values:

F – Freehand

E - Endpoint

*break\_entity*

Indicates whether you wish to break the entity being inserted on as a string value.

Y - Yes

N - No

*insertion\_angle*

Indicates whether to align the node to the object inserted on. Valid values are:

Y – Yes

N - No

*symbol\_name*

Name of the symbol to insert as a string value.

*symbol\_scale*

Scale of the symbol as an integer value.

## Return Values

List consisting of the newly inserted node, the new first broken entity, the second broken entity.

## Examples

**Command:** (setq ename (entsel))

**Command:** (mun-utl-capnode 43 (car ename) (cadr ename) "F" "Y" "Y"  
"\_WGTVALVE" 1.0)

## MUN-UTL-CHECKDB

Checks whether user is connected to database. If not, then displays logon screen and resets application settings.

(mun-utl-checkdb)

### Return Values

None

### Examples

**Command:** (mun-utl-checkdb)

## MUN-UTL-CHECKLOCK

Checks if object is locked – if not then automatically locks object.

(mun-utl-checklock *ename*)

### Arguments

*ename*

Name of the entity that you wish to lock.

### Return Values

1 if successful.

### Examples

**Command:** (setq *ename* (car (entsel)))

**Command:** (mun-utl-checklock *ename*)

1

## MUN-UTL-CHECKLOCKSSET

Checks if selection set is locked – if not then automatically lock objects in selection set.

(mun-utl-checklocksset selset locktype)

### Arguments

*selset*

Name of selection set.

*locktype*

If this is set to “LOCKALL” then this will prompt you if all object in selection set could not be locked.

If this is set to any other string value then you will not be prompted if all objects could not be locked.

### Return Values

T always if locktype is set to any other string.

OR

T if locktype is set to “LOCKALL” and all objects could be locked otherwise returns nil.

### Examples

**Command:** (setq selset (ssget))

**Command:** (mun-utl-checklocksset selset "")

T

## MUN-UTL-CLEARMOP

Clears the last MOP (Munsys Objects Processed) list for any Munsys commands

(mun-utl-clearmop)

### Return Values

Returns T if successful or nil otherwise.

### Examples

**Command:** (mun-utl-clearmop)

## MUN-UTL-CLRERRORMSG

Clears all error messages

(mun-utl-clrerrormsg)

### Return Values

Returns T if successful or nil otherwise.

### Examples

**Command:** (mun-utl-clrerrormsg)

## MUN-UTL-D2R

Converts degrees to radians.

(mun-utl-d2r angle)

### Arguments

*angle*

Angle in degrees as a real value to be converted to radians.

### Return Values

Real value, converted angle in radians.

### Examples

**Command: (mun-utl-d2r 90.0)**  
**1.5708**

## MUN-UTL-DISPLAYANGLE

Sets angle to display text/symbol correctly.

(mun-utl-displayangle angle)

### Arguments

*angle*

Angle in radians as a real value.

### Return Values

Returns angle, in degrees, as a string value.

### Examples

**Command: (mun-utl-displayangle 3.24)**  
**"5.638"**

## MUN-UTL-DRAWAPPROXLINE

Constructs an approximate line and offsets line according to `offset_distance`.

`(mun-utl-drawapproxline offset_distance)`

### Arguments

*offset\_distance*

This is the default distance to offset the constructed line.

### Return Values

Returns entity name of newly constructed object.

### Examples

**Command: (mun-utl-drawapproxline 1.0)**

**Specify approximate start point:**

**Specify approximate end point:**

**Select segment for offset:**

**Specify point on side to offset:**

**Specify offset distance <1.000>:**

**<Entity name: 7efdec28>**

## MUN-UTL-DRAWPOLYLINE

Constructs a freehand and prompts for offset is so specified.

(mun-utl-drawpolyline offset offset\_distance)

### Arguments

*offset*

Strng indicating whether to prompt for offset or not, valid values are “Y” to offset and “N” to not offset.

*offset\_distance*

This is the default distance to offset the constructed polyline.

### Return Values

Returns entity name of newly constructed object.

### Examples

**Command: (mun-utl-drawpolyline "Y" 1.0)**

**Specify points or [Offset segment]:**

**Specify next point:**

**Specify next point:**

**Specify next point:**

**Specify point on side to offset:**

**Specify offset distance <1.000>:**

**<Entity name: 7efdec10>**

## MUN-UTL-EDITBOX

Displays edit dialog box

(mun-utl-editbox text\_value dialog\_description text\_type edit\_width)

### Arguments

*text\_value*

Default value to display in edit box as a string value.

*dialog\_description*

Description of dialog as a string value.

*text\_type*

Type of text to check, valid values are:

ALPHA - Alphanumeric

NUM - Number

*edit\_width*

Maximum number of characters to check for as an integer value.

### Return Values

String of the current value listed in the edit box.

### Examples

**Command:**

(mun-utl-editbox "Current Value" "My Dialog" "ALPHA" 10)  
"1234567890"

## MUN-UTL-ENTSEL

Selects entity based on filter.

(mun-utl-entsel element\_no element\_value lock\_entity prompt\_string  
error\_string)

### Arguments

*element\_no*

Element number to filter on as integer value.

*element\_value*

Element value to filter on as a list, string, integer or real value.

*lock\_entity*

Indicates whether or not to automatically lock object. Valid values are:

T - True (to lock object)

nil – nil (to not lock object)

*prompt\_string*

Displays alternative prompt as a string value.

*error\_string*

Displays alternative prompt as the error prompt as a string value.

### Return Values

List consisting of the entity name and point on entity selected or nil otherwise.

### Examples

```
Command: (mun-utl-entsel 95 45 nil "\nSelect water pipe: "  
"\nObject selected is not a water pipe...")  
(<Entity name: 7efd8458> (-75834.1 -2.88238e+006 0.0))  
Command: (mun-utl-entsel 0 (list "LINE" "LWPOLYLINE" "MUNLINE"  
"MUNPOLY" "MPOLYGON") nil "\nSelect first segment for dimension: "  
"\nCannot determine segment from object selected...")  
(<Entity name: 7efd8458> (-75834.1 -2.88238e+006 0.0))
```

## MUN-UTL-FILEEXISTS

Checks whether file exists.

```
(mun-utl-fileexists filename)
```

### Arguments

*filename*

File name to check for as a string value.

### Return Values

Returns T if file exists or nil otherwise.

### Examples

**Command:** (mun-utl-fileexists "c:\\test.txt")  
**nil**

## MUN-UTL-FILEOPEN

Checks if file is already open.

(mun-utl-fileopen filename)

### Arguments

*filename*

File name to check for as a string value.

### Return Values

Returns T if file is open or nil otherwise.

### Examples

**Command:** (mun-utl-fileopen "c:\\test.txt")  
**nil**

## MUN-UTL-GETCOLUMNPREC

Returns the column precision for a specific column in a table.

(mun-utl-getcolumnprec table\_name column\_name)

### Arguments

*table\_name*

Table name as a string value.

*column\_name*

Column name as a string value whose precision you wish to retrieve.

### Return Values

Precision of column as an integer.

### Examples

**Command:** (mun-utl-getcolumnprec "SP\_WATNODE" "NODE\_ELEV")  
**3**

## MUN-UTL-GETCOLUMNWIDTH

Returns the column width for a specific column in a table.

```
(mun-utl-getcolumnwidth table_name column_name)
```

### Arguments

*table\_name*

Table name as a string value.

*column\_name*

Column name as a string value whose precision you wish to retrieve.

### Return Values

Width of column as an integer.

### Examples

**Command:**

```
(mun-utl-getcolumnwidth "SP_WATNODE" "COMMENTS")
```

**150**

## MUN-UTL-GETCURRENTHELP

Returns the current application help file – used in conjunction with MUN-UTL-SETCURRENTAPP.

(mun-utl-getcurrenthelp)

### Return Values

Returns the current application help file as a string value.

### Examples

**Command:** (mun-utl-getcurrenthelp)  
**"munrms.chm"**

## MUN-UTL-GETELEMENT

Gets element value from an entity.

(mun-utl-getelement element\_id ename)

### Arguments

*element\_id*

Element number to retrieve value for.

*ename*

Entity name to retrieve value from.

### Return Values

Current value of element number.

### Examples

**This example retrieves the layer name of the selected entity**

**Command:** (setq ename (car (entsel)))

**Command:** (mun-utl-getelement 8 ename)

"PARCEL\_C"

## MUN-UTL-GETMOP

Gets the MOP (Munsys Objects Processed) list that was handled by the last Munsys command.

```
(mun-utl-getmop)
```

### Return Values

Returns a list containing a list of ((created)(modified)(deleted)) objects processed by the last Munsys command.

### Examples

**Command:** (mun-utl-getmop)

```
(((<Entity name: 7e909230> <Entity name: 7e909228>)(nil)(<Entity name:  
7e909548>))
```

## MUN-UTL-GETMUNVAR

Returns the value of a Munsys system variable.

```
(mun-utl-getmunvar system_var)
```

### Arguments

*system\_var*

Name of the system variable whose value you wish to retrieve.

### Return Values

Returns the value of the system variable as a string value.

### Examples

**Command:** (mun-utl-getmunvar "MUNTIPSHOW")  
"ON"

## MUN-UTL-GETPLEN

Gets the total length for a given list of points.

```
(mun-utl-getplen point_list)
```

### Arguments

*point\_list*

List consisting of points.

### Return Values

Length of point\_list (this is the total geometry length and not the number of elements).

### Examples

**Command:** (setq ename (car (entsel)))

**Command:** (setq ptlst (mun-utl-getplst ename))

**Command:** (mun-utl-getplen ptlst)

**14.6197**

## MUN-UTL-GETPLST

Gets a point list from either a LINE or LWPOLYLINE object.

(mun-utl-getplst *ename*)

### Arguments

*ename*

Entity name whose points you wish to retrieve.

### Return Values

List of points.

### Examples

**Command:** (setq *ename* (car (entsel)))

**Command:** (setq *ptlst* (mun-utl-getplst *ename*))

((-75832.8 -2.8824e+006 0.0) (-75828.3 -2.88239e+006 0.0) (-75823.7  
-2.8824e+006 0.0) (-75821.5 -2.88239e+006 0.0)  
(-75819.5 -2.88239e+006 0.0))

## MUN-UTL-GETREGVALUE

Gets the registry key value located under Munsys registry path  
[[HKEY\_CURRENT\_USER\Software\Open Spatial\Munsys[version]\Applications\Options  
key]]

(mun-utl-getregvalue reg\_subpath reg\_key)

### Arguments

*reg\_subpath*

The sub key path to retrieve registry key value located under the Munsys registry path.

*reg\_key*

Registry key to retrieve.

### Return Values

Returns the registry key value as a string.

### Examples

**Command:** (mun-utl-getregvalue "" "InitEnvironment")  
"1"

## MUN-UTL-GETSUBSEGMENT

Gets the sub segment of an object closest to the point selected. The only valid objects are LINE, LWPOLYLINE, MUNLINE, MUNPOLY, MPOLYGON.

(mun-utl-getsubsegment *ename* *point\_on\_segment*)

### Arguments

*ename*

Name of the entity whose segment you wish to retrieve.

*point\_on\_segment*

Point on the segment for which you want to retrieve.

### Return Values

List consisting of start point of segment, end point of segment and angle of segment in radians or nil otherwise

### Examples

**Command:** (setq *ename* (entsel))

**Command:** (mun-utl-getsubsegment (car *ename*) (cadr *ename*))

((-75807.3 -2.88248e+006 0.0) (-75753.0 -2.88254e+006 0.0) 5.46795)

## MUN-UTL-GETTABLENAME

Returns the spatial table name that corresponds to the mun\_id.

```
(mun-utl-gettablename mun_id)
```

### Arguments

*mun\_id*

Munsys ID of the table name you wish to retrieve.

### Return Values

Returns spatial table name as a string.

### Examples

**Command: (mun-utl-gettablename 3)**  
**"SP\_PARCEL"**

## MUN-UTL-GETTEXTJUST

Gets the text justification for a text object.

(mun-utl-gettextjust *ename*)

### Arguments

*ename*

Name of the entity whose tag justification you wish to retrieve.

### Return Values

Returns one of the following values as a string or nil otherwise:

L – Left

C – Center

M – Middle

R – Right

TL – Top Left

TC – Top Center

TR – Top Right

ML – Middle Left

MC – Middle Center

MR – Middle Right

BL – Bottom Left

BC – Bottom Center

BR – Bottom Right

### Examples

**Command:** (mun-utl-gettextjust (car (entsel)))  
**"TL"**

## MUN-UTL-GETVERSIONKEY

Gets the current Munsys version number.

(mun-utl-getversionkey)

### Arguments

*None*

### Return Values

Current version number as a string value of the major version concatenated with the minor version number.

### Examples

**Command:** (mun-utl-getversionkey)  
"15.1"

## MUN-UTL-GETWORKCOLOR

Returns the current working color.

**Important** This function was deprecated in Munsys 9.2 and replaced with the Munsys system variable MUNCOLINTEGRITY - see MUN-UTL-GETMUNVAR and MUN-UTL-SETMUNVAR for getting and setting this variable respectively.

(mun-utl-getworkcolor)

### Return Values

Working color as an integer value.

### Examples

**Command:** (mun-utl-getworkcolor)

3

## MUN-UTL-GSCREFRESH

Refreshes the GSC settings with latest values in database. Function is only necessary if the GSC values are updated via SQL and these updated settings needs to be reflected in the current session.

(mun-utl-gscrefresh)

### Arguments

*None*

### Return Values

T if successful or Nil otherwise.

### Examples

**Command:** (mun-utl-gscrefresh)

T

## MUN-UTL-MUNBREAK

Breaks Munsys object and returns entity names of the 2 new objects.

```
(mun-utl-munbreak ename point_on_ent)
```

### Arguments

*ename*

Name of the entity that you wish to break.

*point\_on\_ent*

Point on entity - also indicates break point.

### Return Values

List consisting of 2 new entity names.

### Examples

**Command:** (setq ename (entsel))

**Command:** (mun-utl-munbreak (car ename) (cadr ename))

(<Entity name: 7eb88968> <Entity name: 7eb88970>)

## MUN-UTL-PROMPT-CLEAR

Clears the current prompt values.

(mun-utl-prompt-clear)

### Return Values

Returns T if successful or nil otherwise.

### Examples

**Command:** (mun-utl-prompt-clear)  
**T**

## MUN-UTL-PROMPT-SET

Sets the prompt values for any Munsys commands.

(mun-utl-prompt-set prompt\_type prompt\_value)

### Arguments

*prompt\_type*

The type of prompt to set as a string value. Valid options are:

VALUE – value for the prompt

PROMPT – alternative prompt

ENTSEL – selection entity

*prompt\_value*

Value of the prompt. The following types are valid:

VALUE – string,real,integer,point

PROMPT – string

ENTSEL – (list consisting of entity name and point on entity)

e.g. (<Entity name: 7eb2bda8> (-75787.7 -2.8825e+006 0.0))

### Return Values

None

### Examples

**Command: (mun-utl-prompt-clear)**

**Command: (mun-utl-prompt-set "ENTSEL" (list CENT (list 0.0 0.0 0.0)))**

**Command: (mun-utl-prompt-set "VALUE" "Join")**

**Command: (mun-utl-prompt-set "PROMPT" "Specify join mode  
[Extended/Linked]: ")**

**Command: (command "mungedit" PAUSE PAUSE PAUSE "eXit" "")**

## MUN-UTL-R2D

Converts radians to degrees.

(mun-utl-r2d angle)

### Arguments

*angle*

Angle in radians as a real value to be converted to degrees.

### Return Values

Real value, converted angle in degrees.

### Examples

**Command: (mun-utl-r2d 1.57)**  
**89.9544**

## MUN-UTL-SETCURRENTAPP

Sets the internal current application setting. This function is mainly used with MUN-UTL-GETCURRENTHELP in order to specify which is the current application and which help file is now appropriate.

```
(mun-utl-setcurrentapp app_name)
```

### Arguments

*app\_name*

Application name of the current application.

### Return Values

Returns T if successful or nil otherwise.

### Examples

**Command:** (mun-utl-setcurrentapp "CMS")

**T**

## MUN-UTL-SETCURRENTLAYER

Sets the current layer – if layer does not exists then it automatically creates a new layer with the default color of layer\_color.

```
(mun-utl-setcurrentlayer layer_name layer_color)
```

### Arguments

*layer\_name*

Name of the layer to set or create as a string value.

*layer\_color*

Color of new layer as an integer value.

### Return Values

None

### Examples

**Command:** (mun-utl-setcurrentlayer "MYLAYER" 1)

## MUN-UTL-SETDEBUG

Sets the SQL debug statement. This allows you to view all SQL statements executed on the database.

(mun-utl-setdebug debug\_state)

### Arguments

*debug\_state*

Integer – 1 for on, 0 for off

### Return Values

Returns T if successful or nil otherwise.

### Examples

**Command: (mun-utl-setdebug 1)**  
**Debug Mode switched On.T**

## MUN-UTL-SETELEMENT

Sets element value for an entity with new value.

```
(mun-utl-setelement element_id ename new_value)
```

### Arguments

*element\_id*

Element number to set value for.

*ename*

Entity name to set value for.

*new\_value*

New value for element number.

### Return Values

An association list containing the updated entity definition of *ename*.

### Examples

**Command:** (entmod (mun-utl-setelement 8 ename "PARCEL"))

## MUN-UTL-SETMUNVAR

Sets the value of a Munsys system variable.

```
(mun-utl-setmunvar system_var value)
```

### Arguments

*system\_var*

Name of the system variable whose value you wish to retrieve.

*value*

The value to set the system variable to as a string value.

### Return Values

T if successful or nil otherwise.

### Examples

**Command:** (mun-utl-setmunvar "MUNTIPSHOW" "ON")

**T**

## MUN-UTL-SETREGVALUE

Sets the registry key value located under Munsys registry path  
[[HKEY\_CURRENT\_USER\Software\Open Spatial\Munsys[version]\Applications\Options  
key]]

(mun-utl-setregvalue reg\_subpath reg\_key new\_value)

### Arguments

*reg\_subpath*

The sub key path to set the registry key value located under the Munsys registry path.

*reg\_key*

Registry key to set.

*new\_value*

The new registry value to set as a string value.

### Return Values

T if successful or nil otherwise.

### Examples

**Command:** (mun-utl-setregvalue "" "InitEnvironment" "1")  
"T"

## MUN-UTL-SSGET

Select entities and locks objects if required.

```
(mun-utl-ssget filter_list munsys_filter lock_entity prompt_string)
```

### Arguments

*filter\_list*

ssget filter list as standard AutoCAD filter list.

*munsys\_filter*

The munsys\_filter allows you to filter on values not available with the standard (ssget) function such as the symbol/block names on MUNPOINT objects, for example:

```
(mun-utl-ssget '((0. "MUNLABEL,MUNPOINT,MUNLINE,MUNPOLY")(95 .  
23))(list 2 (list "_SOVALVE" "_SCLVALVE"))) T "\nSelect open or closed  
valves...")
```

*lock\_entity*

Indicates whether or not to automatically lock objects. Valid values are:

T - True (to lock object)

nil – nil (to not lock object)

*prompt\_string*

Displays alternative prompt as a string value.

### Return Values

Selection set or nil otherwise.

### Examples

**Command:** (mun-utl-ssget '((0 . "MUNLINE")(95 . 46)) nil T "\nSelect service connections...")

## MUN-UTL-SYSDATE

Gets the current date according to the regional settings.

(mun-utl-sysdate)

### Arguments

*None*

### Return Values

Date as a string value formatted according to the regional setting.

### Examples

**Command: (mun-utl-sysdate)**  
**"16 March 2005"**

## MUN-UTL-SYSTIME

Gets the current time according to the regional settings.

(mun-utl-systime)

### Arguments

*None*

### Return Values

Time as a string value formatted according to the regional setting.

### Examples

**Command: (mun-utl-systime)**  
**"9:25:14 AM"**

## MUN-UTL-ZOOMENTITY

Zooms to the extents of an entity.

(mun-utl-zoomentity *ename* *scale*)

### Arguments

*ename*

Name of the entity to zoom extents to.

*scale*

Zoom scale factor to use as a real value.

### Return Values

None

### Examples

**Command:** (mun-utl-zoomentity (entlast) 1.0)

## MUNPOINT FUNCTIONS

### MUN-MUNPOINT-GETNUMOFPOINTS

Gets the number of points in a MUNPOINT object.

(mun-munpoint-getnumofpoints *ename*)

#### Arguments

*ename*

Entity name of object to retrieve number of points from.

#### Return Values

Number of points as an integer value.

#### Examples

**Command:** (setq *ename* (car (entsel)))

**Command:** (mun-munpoint-getnumofpoints *ename*)

**1**

## MUN-MUNPOINT-GETPOINT

Gets the insertion point for the specified point of a MUNPOINT object.

```
(mun-munpoint-getpoint ename point_num)
```

### Arguments

*ename*

Entity name of object to retrieve point from.

*point\_num*

Point position – 0 based index.

### Return Values

Point

### Examples

**Command:** (setq ename (car (entsel)))

**Command:** (mun-munpoint-getpoint ename 0)  
(-75804.1 -2.88235e+006 0.0)

## MUN-MUNPOINT-GETSYMANGLE

Gets the symbol angle for a MUNPOINT object.

```
(mun-munpoint-getsymangle ename)
```

### Arguments

*ename*

Entity name of object to retrieve symbol angle from.

### Return Values

Symbol angle as a real value in radians.

### Examples

**Command:** (setq ename (car (entsel)))

**Command:** (mun-munpoint-getsymangle ename)

**0.79**

## MUN-MUNPOINT-GETSYMNAME

Gets the symbol name for a MUNPOINT object.

(mun-munpoint-getsymname *ename*)

### Arguments

*ename*

Entity name of object to retrieve symbol name from.

### Return Values

Symbol Name as a string value.

### Examples

**Command:** (setq *ename* (car (entsel)))

**Command:** (mun-munpoint-getsymname *ename*)  
" \_WGTVALVE"

## MUN-MUNPOINT-GETSYMSCALE

Gets the symbol scale for a MUNPOINT object.

(mun-munpoint-getsymscale *ename*)

### Arguments

*ename*

Entity name of object to retrieve symbol scale from.

### Return Values

Symbol scale as a real value.

### Examples

**Command:** (setq *ename* (car (entsel)))

**Command:** (mun-munpoint-getsymscale *ename*)

**1.0**

## MUN-MUNPOINT-SETSYMANGLE

Sets the symbol angle for a MUNPOINT object.

```
(mun-munpoint-setsymangle ename symbol_angle)
```

### Arguments

*ename*

Entity name of object to update.

*symbol\_angle*

Symbol angle as a real value in radians.

### Return Values

None

### Examples

**Command:** (setq ename (car (entsel)))

**Command:** (mun-munpoint-setsymangle ename 1.57)

## MUN-MUNPOINT-SETSYMNAME

Sets the symbol name for a MUNPOINT object.

```
(mun-munpoint-setsymname ename symbol_name)
```

### Arguments

*ename*

Entity name of object to update.

*symbol\_name*

Symbol name as a string value.

### Return Values

None

### Examples

**Command:** (setq ename (car (entsel)))

**Command:** (mun-munpoint-setsymname ename "\_WGTVALVE")

## MUN-MUNPOINT-SETSYMSCALE

Sets the symbol scale for a MUNPOINT object.

```
(mun-munpoint-setsymscale ename symbol_scale)
```

### Arguments

*ename*

Entity name of object to update.

*symbol\_scale*

Symbol scale as a real value.

### Return Values

None

### Examples

**Command:** (setq ename (car (entsel)))

**Command:** (mun-munpoint-setsymscale ename 1.0)

## MUNLINE FUNCTIONS

### MUN-MUNLINE-CHANGEDIRECTION

Changes the direction of a MUNLINE object.

(mun-munline-changedirection *ename*)

#### Arguments

*ename*

Entity name of object to update.

#### Return Values

T if successful or nil otherwise.

#### Examples

**Command:** (setq *ename* (entsel))

**Command:** (mun-munline-changedirection (car *ename*))

**T**

## MUN-MUNLINE-ENDPOINT

Gets the end point of a MUNLINE object.

(mun-munline-endpoint *ename*)

### Arguments

*ename*

Entity name of object to retrieve end point from.

### Return Values

End point of MUNLINE as a point.

### Examples

**Command:** (setq *ename* (entsel))

**Command:** (mun-munline-endpoint (car *ename*))

(-76117.4 -2.88262e+006 0.0)

## MUN-MUNLINE-GETNUMOFSEGMENTS

Gets the number of segments of a MUNLINE object.

(mun-munline-getnumofsegments *ename*)

### Arguments

*ename*

Entity name of object to retrieve number of segments from.

### Return Values

Returns an integer value indicating the number of segments in a MUNLINE object.

### Examples

**Command:** (setq *ename* (entsel))

**Command:** (mun-munline-getnumofsegments (car *ename*))

1

## MUN-MUNLINE-GETSEGMENT

Gets the segment number of the selected segment on a MUNLINE object.

(mun-munline-getsegment *ename* *point\_on\_segment*)

### Arguments

*ename*

Entity name of object to retrieve segment from.

*point\_on\_segment*

Point on segment to retrieve.

### Return Values

Returns 0 based segment number as an integer value.

### Examples

**Command:** (setq *ename* (entsel))

**Command:** (mun-munline-getsegment (car *ename*) (cadr *ename*))

**0**

## MUN-MUNLINE-MOVEPOINT

Moves a point on a MUNLINE object to a new specified point.

(mun-munline-movepoint *ename* *segment\_number* *point\_to\_move* *new\_point*)

### Arguments

*ename*

Entity name of object to update.

*segment number*

Segment number containing point to move - 0 based index.

*point\_to\_move*

Point closest to point that you wish to move.

*new\_point*

Position of new point.

### Return Values

None

### Examples

**Command:** (setq *ename* (entsel))

**Command:** (setq *oldpt* (getpoint "\nSpecify point to move: "))

**Command:** (setq *newpt* (getpoint "\nSpecify new point: "))

**Command:** (mun-munline-movepoint (car *ename*) 3 *oldpt* *newpt*)

## MUN-MUNLINE-SEGMENT-DISTFROMEND

Gets the distance that a point lying on a segment is from the end point of that segment. The distance calculated is the distance along the segment from the point indicated to the end of the specified segment.

```
(mun-munline-segment-distfromend ename  
  segment_number point_on_segment)
```

### Arguments

*ename*

Entity name of object.

*segment\_number*

Number of segment that point lies on – 0 based Index.

*point\_on\_segment*

Point on segment.

### Return Values

Distance from end point of segment as a real value.

### Examples

**Command:** (setq *ename* (entsel))

**Command:** (setq *seignum* (mun-munline-getsegment (car *ename*) (cadr *ename*)))

**Command:** (mun-munline-segment-distfromend (car *ename*) *SEGNUM* (osnap  
 (cadr *ename*) "\_nea"))

**51.459**

## MUN-MUNLINE-SEGMENT-DISTFROMSTART

Gets the distance that a point lying on a segment is from the start point of that segment.

```
(mun-munline-segment-distfromstart ename segment_number  
point_on_segment)
```

### Arguments

*ename*

Entity name of object.

*segment\_number*

Number of segment that point lies on.

*point\_on\_segment*

Point on segment.

### Return Values

Distance from start point of segment as a real value.

### Examples

**Command:** (setq ename (entsel))

**Command:** (setq segnum (mun-munline-getsegment (car ename) (cadr ename)))

**Command:** (mun-munline-segment-distfromstart (car ename) SEGNUM (osnap  
(cadr ename) "\_nea"))

**51.459**

## MUN-MUNLINE-SEGMENT-ENDPOINT

Gets the end point of a segment

(mun-munline-segment-endpoint *ename* *segment\_number*)

### Arguments

*ename*

Entity name of object whose segments end point you wish to retrieve.

*segment\_number*

Number of segment whose end point you wish to retrieve – 0 based index.

### Return Values

End point of segment as a point.

### Examples

**Command:** (setq *ename* (entsel))

**Command:** (mun-munline-segment-endpoint (car *ename*) 0)  
(-75748.0 -2.88256e+006 0.0)

## MUN-MUNLINE-SEGMENT-GETPOINTAT

Returns a specific point within a given segment.

(mun-munline-segment-getpointat *ename* *segment\_number* *point\_num*)

### Arguments

*ename*

Entity name of object containing point to retrieve.

*segment\_number*

Number of segment containing point to retrieve – 0 based index.

*point\_num*

Position of point within segment – 0 based index.

### Return Values

Point at given position.

### Examples

Example returns the first point of the first segment:

**Command:** (setq *ename* (entsel))

**Command:** (mun-munline-segment-getpointat (car *ename*) 0 0)  
(-75884.1 -2.88254e+006 0.0)

## MUN-MUNLINE-SEGMENT-GETVERTICES

Gets the vertices for a MUNLINE object.

(mun-munline-segment-getvertices *ename* *segment\_number*)

### Arguments

*ename*

Name of the entity whose vertices you wish to retrieve.

*segment\_number*

Number of the segment you wish to retrieve the vertices for. The *segment\_number* parameter has a 0 based index.

### Return Values

List containing a list of vertices and a list of bulges.

### Examples

**Command:** (setq *ename* (entsel))

**Command:** (setq *segment\_number* (mun-munline-getsegment  
(car *ename*) (cadr *ename*)))

**Command:** (mun-munline-segment-getvertices (car *ename*) *segment\_number*)  
((( -76328.718 -2883468.056 0.0) (-76313.518 -2883472.736 0.0)  
(-76284.888 -2883445.536 0.0) (-76306.118 -2883429.676 0.0))  
(0.0 1.25 0.0 0.0))

## MUN-MUNLINE-SEGMENT-LENGTH

Gets the geometry length of a MUNLINE segment.

(mun-munline-segment-length *ename* *segment\_number*)

### Arguments

*ename*

Entity name of object whose segment length you wish to retrieve.

*segment\_number*

Number of segment whose length you wish to retrieve – 0 based index.

### Return Values

Length of segment as a real value.

### Examples

**Command:** (setq *ename* (entsel))

**Command:** (mun-munline-segment-length (car *ename*) 0)

**91.1138**

## MUN-MUNLINE-SEGMENT-MIDPOINT

Gets the mid point of a segment.

(mun-munline-segment-midpoint ename segment\_number)

### Arguments

*ename*

Entity name of object whose segments mid point you wish to retrieve.

*segment\_number*

Number of segment whose mid point you wish to retrieve – 0 based index.

### Return Values

Mid point of segment as a point.

### Examples

**Command:** (setq ename (entsel))

**Command:** (mun-munline-segment-midpoint (car ename) 0)  
(-75748.0 -2.88256e+006 0.0)

## MUN-MUNLINE-SEGMENT-NUMOFPOINTS

Gets the number of points within a MUNLINE segment.

(mun-munline-segment-numofpoints *ename* *segment\_number*)

### Arguments

*ename*

Entity name of object.

*segment\_number*

Number of segment whose points you wish to count – 0 based Index.

### Return Values

Number of points on a segment as an integer value.

### Examples

**Command:** (setq *ename* (entsel))

**Command:** (mun-munline-segment-numofpoints (car *ename*) 0)

**2**

## MUN-MUNLINE-SEGMENT-STARTPOINT

Gets the start point of a segment.

```
(mun-munline-segment-startpoint ename segment_number)
```

### Arguments

*ename*

Entity name of object whose segments start point you wish to retrieve.

*segment\_number*

Number of segment whose start point you wish to retrieve – 0 based index.

### Return Values

Start point of segment as a point.

### Examples

**Command:** (setq ename (entsel))

**Command:** (mun-munline-segment-startpoint (car ename) 0)  
(-75748.0 -2.88256e+006 0.0)

## MUN-MUNLINE-SETENDPOINT

Sets a new end point for a MUNLINE object.

(mun-munline-setendpoint *ename* *segment\_number* *point*)

### Arguments

*ename*

Entity name of object to update.

*segment\_number*

Segment number of end point to set - 0 based index.

*point*

New end point.

### Return Values

None

### Examples

**Command:** (setq *ename* (entsel))

**Command:** (setq *pt* (getpoint "\nSpecify new end point: "))

**Command:** (mun-munline-setendpoint (car *ename*) 0 *pt*)

## MUN-MUNLINE-SETSTARTPOINT

Sets a new start point for a MUNLINE object.

(mun-munline-setstartpoint *ename* *segment\_number* *point*)

### Arguments

*ename*

Entity name of object to update.

*segment\_number*

Segment number of start point to set - 0 based index.

*point*

New start point.

### Return Values

None

### Examples

**Command:** (setq *ename* (entsel))

**Command:** (setq *pt* (getpoint "\nSpecify new start point: "))

**Command:** (mun-munline-setstartpoint (car *ename*) 0 *pt*)

## MUN-MUNLINE-STARTPOINT

Gets the start point of a MUNLINE object.

(mun-munline-startpoint *ename*)

### Arguments

*ename*

Entity name of object to retrieve start point from.

### Return Values

Start point of MUNLINE as a point.

### Examples

**Command:** (setq *ename* (entsel))

**Command:** (mun-munline-startpoint (car *ename*))

(-75839.5 -2.88239e+006 0.0)

## MUNPOLY FUNCTIONS

### MUN-MUNPOLY-COPYOBJECT

Copies a MUNPOLY object to a new Munsys Spatial Type based on the Munsys ID.

`(mun-munpoly-copyobject ename mun_id)`

#### Arguments

*ename*

Entity name of object to copy.

*mun\_id*

Munsys ID of new spatial type to create for new object as an integer value.

#### Return Values

None

#### Examples

**Command:** `(setq ename (entsel))`

**Command:** `(mun-munpoly-copyobject (car ename) 1)`

## MUN-MUNPOLY-GETBOUNDARY

Returns the boundary number to the point specified on the boundary.

```
(mun-munpoly-getboundary ename point_on_boundary)
```

### Arguments

*ename*

Entity name of object containing boundary number to retrieve.

*point\_on\_boundary*

Point on the boundary.

### Return Values

Boundary number as an integer value – 0 based index.

### Examples

**Command:** (setq ename (entsel))

**Command:** (mun-munpoly-getboundary (car ename) (cadr ename))

**0**

## MUN-MUNPOLY-GETNUMOFPOLYS

Gets the number of boundary polygons of a MUNPOLY object.

(mun-munpoly-getnumofpolys *ename*)

### Arguments

*ename*

Entity name of object.

### Return Values

Number of outer boundaries as an integer value.

### Examples

**Command:** (setq *ename* (entsel))

**Command:** (mun-munpoly-getnumofpolys (car *ename*))

1

## MUN-MUNPOLY-GETNUMTOTALPOLYS

Gets the total number of polygons including islands of a MUNPOLY object.

(mun-munpoly-getnumtotalpolys *ename*)

### Arguments

*ename*

Entity name of object.

### Return Values

Number of all boundaries as an integer value.

### Examples

**Command:** (setq *ename* (entsel))

**Command:** (mun-munpoly-getnumtotalpolys (car *ename*))

1

## MUN-MUNPOLY-GETVERTICES

Gets the vertices for a MUNPOLY object.

```
(mun-munpoly-getvertices ename poly_num)
```

### Arguments

*ename*

Name of the entity whose vertices you wish to retrieve.

*poly\_num*

Number of the polygon(s) you wish to retrieve the vertices for. The poly\_num parameter has a 0 based index.

### Return Values

List containing a list of vertices and a list of bulges.

### Examples

**Command:** (setq poly\_num (mun-munpoly-getboundary ename (getpoint)))

**Command:** (mun-munpoly-getvertices ename poly\_num)

**((( -76328.718 -2883468.056 0.0) (-76313.518 -2883472.736 0.0) (-76284.888 -2883445.536 0.0) (-76306.118 -2883429.676 0.0)) (0.0 1.25 0.0 0.0))**

## MUN-MUNPOLY-ISPOINTINSIDE

Determines whether a point lies within a MUNPOLY object. This function only checks whether the point lies within the disjoint boundaries and not the islands within the disjoint boundaries.

(mun-munpoly-ispoininside *ename* *point*)

### Arguments

*ename*

Entity name of object to that contains point to check.

*point*

Point to check if it lies within a MUNPOLY object.

### Return Values

T if point lies within otherwise nil.

### Examples

**Command:** (setq *ename* (entsel))

**Command:** (setq *pt* (getpoint "\nSpecify point: "))

**Command:** (mun-munpoly-ispoininside (car *ename*) *pt*)

**T**



## Appendix

### Munsys commands

The following table contains a list of the Munsys commands:

| Command         | Description                                 |
|-----------------|---------------------------------------------|
| CMSCHKINTEGRITY | Cadastral Object Integrity                  |
| CMSBUILDINGEDIT | Edit Building Information                   |
| DMSCHKINTEGRITY | Drainage Object Integrity                   |
| DMSCHKNETWORK   | Drainage Network Integrity                  |
| EMSCHKINTEGRITY | Electricity Object Integrity                |
| EMSCHKNETWORK   | Electricity Network Integrity               |
| CRSCHKINTEGRITY | Cable Route Object Integrity                |
| CRSCHKNETWORK   | Cable Route Network Integrity               |
| CRSDUCTEDIT     | Edit Cable Route Duct Information           |
| CFSCHKINTEGRITY | Cable Fiber Object Integrity                |
| MUNABOUT        | Show about dialog                           |
| MUNADDSPVIEW    | Adds a spatial table as a view              |
| MUNANNOTATE     | Annotate                                    |
| MUNAPSETTINGS   | Application Settings                        |
| MUNATMANAGE     | Create and maintain attribute templates     |
| MUNBLDPOLYGONS  | Builds polygons for specified spatial table |
| MUNBREAK        | Break                                       |
| MUNBROWSE       | Table Browse                                |
| MUNBROWSELOCK   | Browse locked objects                       |
| MUNCHAMFER      | Chamfer                                     |
| MUNCHPROP       | Change Munsys display properties            |
| MUNCONNECT      | Connect                                     |

|                               |                                                                                  |
|-------------------------------|----------------------------------------------------------------------------------|
| MUNCONVERT                    | AutoCAD objects to Munsys objects                                                |
| MUNDEL                        | Delete objects                                                                   |
| <i>MUNDELEXEC</i>             | <i>Obsolete (Deprecated)</i>                                                     |
| MUNDISCONNECT                 | Disconnect                                                                       |
| MUNEDITATTR                   | Edit attributes                                                                  |
| MUNEDITLTATTR                 | Edit linked table attributes                                                     |
| MUNEDITSPATTR                 | Edit spatial attributes                                                          |
| MUNFILLET                     | Fillet                                                                           |
| MUNFRACTURE                   | Fracture                                                                         |
| MUNGEDIT                      | Geometry Edit                                                                    |
| MUNGEOSCANQRY                 | Automatically inserts Geo-scan image for selected point, line or polygon search. |
| MUNGOOGLEEARTH                | Creates a KML file to display information in Google Earth                        |
| MUNGSCADDOBJ                  | Adds objects to a GSC                                                            |
| MUNGSCCREATE                  | Create GSC                                                                       |
| MUNGSCCREATESCREEN<br>EXTENTS | Create GSC from current Screen Extents                                           |
| MUNGSCMODIFY                  | Allows user to set new GSC using current GSC settings                            |
| MUNGSCSETTINGS                | GSC Settings                                                                     |
| MUNGSCSHOW                    | Show GSC                                                                         |
| MUNGSCTOCAD                   | Convert the current GSC to a polyline or point object.                           |
| MUNGSCZOOM                    | Zoom to GSC                                                                      |
| MUNHELMERT                    | Helmert Transformation                                                           |
| MUNIMGBOUNDARY                | Associates images/PDF/DWG with boundary objects                                  |
| MUNIMGGEOREF                  | Allows an image/PDF/DWG to be selected, scaled or rotated                        |
| MUNIMGLOAD                    | Loads an image/PDF/DWG associated with a Geo-scan boundary object                |
| MUNIMGUNLOAD                  | Unloads an image/PDF/DWG associated with a Geo-scan boundary object              |
| MUNIMGHYPERLINK               | Attaches a hyperlink to a selected Geo-scan boundary object                      |
| MUNIMGLOAD                    | Loads image for selected Geo-scan boundaries                                     |

|                  |                                                                                                                                         |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| MUNIMGREPOSITION | Repositions a selected Geo-scan boundary object                                                                                         |
| MUNIMGRESYNC     | Re-syncs a selected Geo-scan boundary object                                                                                            |
| MUNIMGUNLOAD     | Unloads image for selected Geo-scan boundaries                                                                                          |
| MUNINFOPALETTE   | Shows the Munsys Info Palette                                                                                                           |
| MUNINFOSELECT    | Toggles the behavior of the auto-select option in the Info Palette                                                                      |
| MUNINTEGMODE     | Integrity Color Mode Use/Not Use                                                                                                        |
| MUNINTERRDEL     | Erase Integrity Markers                                                                                                                 |
| MUNINTERRVIEW    | Integrity Error View                                                                                                                    |
| MUNLBLPLACE      | Place Label                                                                                                                             |
| MUNLEGEND        | Place Legend                                                                                                                            |
| MUNLOCK          | Lock objects                                                                                                                            |
| MUNLTMANAGE      | Create and maintain link templates                                                                                                      |
| MUNLWPOLYMODE    | For AutoCAD only and used when querying Munsys Objects as CAD Objects.<br>1 = query as LWPOLYLINE<br>0 = old style heavyweight polyline |
| MUNMDEXPORT      | Export metadata associated with one or more spatial tables                                                                              |
| MUNNOTEPLACE     | Place Note                                                                                                                              |
| MUNOBJECT        | Convert object to Munsys object                                                                                                         |
| MUNOPTIONS       | Munsys Options                                                                                                                          |
| MUNPASSWORD      | Change current Oracle password.                                                                                                         |
| MUNPOLYBLDCAD    | Build CAD polygon                                                                                                                       |
| MUNPOLYBLDNEW    | Build New Munsys Polygon                                                                                                                |
| MUNPOLYREBUILD   | Rebuild Existing Munsys Polygon                                                                                                         |
| MUNPOLYVALIDATE  | Validate Polygon                                                                                                                        |
| MUNPOSTOBS       | Post objects to database                                                                                                                |
| <i>MUNQRYCAD</i> | <i>Obsolete (Deprecated)</i>                                                                                                            |
| MUNQRYEXEC       | Query Run (Execute on command line)                                                                                                     |
| MUNQRYEXECGRP    | Runs all Queries in Category (Execute on command line)                                                                                  |
| MUNQRYMULTIPLE   | Runs checked queries from the Query Palette                                                                                             |
| MUNQRYOPTIONS    | Query Preferences Options                                                                                                               |

|                      |                                                          |
|----------------------|----------------------------------------------------------|
| MUNQRYPALETTE        | Shows the Query Palette                                  |
| MUNQRYREFRESH        | Refresh queried objects                                  |
| MUNQRYRUN            | Query Run                                                |
| MUNREMOVESPVVIEW     | Removes a spatial view                                   |
| MUNSETCOORDSYS       | Set Coordinate System                                    |
| MUNSHOWDBEXTENTS     | Show database extents                                    |
| MUNSHOWINFO          | Show Info Dialog                                         |
| <i>MUNSHOWLLGRID</i> | <i>Show LL Grid (Unsupported)</i>                        |
| MUNSHOWLOCK          | Show locked objects                                      |
| MUNTAG               | Place Tag                                                |
| MUNTEDIT             | Tag Edit (Command line)                                  |
| MUNTMOVE             | Move Tag                                                 |
| MUNTRIM              | Trim                                                     |
| MUNTVALUE            | Edit Tag Value                                           |
| MUNUNDEL             | Undelete Object                                          |
| MUNUNLOCK            | Unlock objects                                           |
| <i>MUNUTLEXEC</i>    | <i>Obsolete (Deprecated)</i>                             |
| <i>MUNUTLEXECN</i>   | <i>Obsolete (Deprecated)</i>                             |
| MUNWEED              | Weed                                                     |
| MUNZOOMDBEXTENTS     | Zoom to database extents                                 |
| MUNZOOMINTEGCIRC     | Zoom to Integrity Circles                                |
| RMSCHKINTEGRITY      | Roads Object Integrity                                   |
| RMSCHKNETWORK        | Roads Network Integrity                                  |
| SDMCAPSELECT         | Spatial Data Manager, Convert Objects to Spatial Objects |
| SDMCHKINTEGRITY      | Spatial Data Manager Object Integrity                    |
| SMSCHKINTEGRITY      | Sewer Object Integrity                                   |
| SMSCHKNETWORK        | Sewer Network Integrity                                  |
| WMSCHKINTEGRITY      | Water Object Integrity                                   |
| WMSCHKNETWORK        | Water Network Integrity                                  |

Table 1 Munsys commands