

Twelve Pinal County Land Use Descriptions

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The twelve land uses listed in the Table below include nine land uses which were previously agreed upon by the Arizona Department of Environmental Quality (ADEQ), Pinal County Air Quality Control District (PCAQCD), and Sierra Research as land use classifications for the purposes of calculating the Pinal County Nonattainment Area Emission Inventory, as well as three additional land uses for subclassification of construction areas which were derived from County construction permits. A GIS layer has been created categorizing areas of the Pinal County Nonattainment Area into the twelve land use categories listed below:

ADEQID	Description
A	Developed Urban Lands
B	Developed Rural Lands (low density residential)
C	Paved Roads
D	Unpaved Roads
E	Cleared Areas
F	Residential Construction
G	CAFOs and Dairies
H	Desert Shrubland
I	Agricultural Croplands
J	Commercial Construction
K	Other
L	Site Development

Below are descriptions of each of the land uses listed in the above Table.

- A. Developed Urban Lands – A land parcel which has been significantly cleared of natural desert vegetation, contains a man-made structure, and has a total area of land which is greater than ~50% covered by non-native vegetation (e.g. lawn grass), rock, buildings, or pavement.
- B. Developed Rural Lands – A land parcel which has been significantly cleared of natural desert vegetation, contains a man-made structure, but has a total area of land which is less than ~50% covered by non-native vegetation (e.g. lawn grass), rock, buildings, or pavement.
- C. Paved Roads – Any roadway which has been covered by concrete or asphalt pavement.
- D. Unpaved Roads – Any roadway which has not been covered by concrete or asphalt pavement including County Maintained Dirt, Trail, Asphalt Rock Dust Pallative (ARDP), Private Dirt, Railroad, Agricultural, and Construction roadways.
- E. Cleared Areas – A land parcel which has been significantly cleared of natural desert vegetation, but does not contain a man-made structure or significant coverage by non-native vegetation.

- F. Residential Construction – A land parcel which was permitted for residential construction for the year of 2008 by PCAQCD or which contained visible evidence of residential construction from 2008 aerial photography (e.g. unfinished residential structures and construction equipment).
- G. CAFOs and Dairies – A land parcel which was identified as a Concentrated Animal Feeding Operation (CAFO) or dairy by PCAQCD.
- H. Desert Shrublands – A land parcel which has no significant clearing of natural vegetation and contains no man-made structures.
- I. Agricultural Croplands – A land parcel which was identified by PCAQD or ADEQ through aerial photography as actively growing or showing signs of previously growing cultivated crops for agricultural purposes. This land use was QA/QC'ed by the Cotton Research and Protection Council and further resolved to the crops grown on individual fields within a 6 km boundary of the Maricopa, Cowtown, Pinal County Housing, and Stanfield air monitors for the year of 2008. Outside of these 6 km boundaries, agricultural land was identified by PCAQCD land ownership records.
- J. Commercial Construction - A land parcel which was permitted by PCAQCD for commercial construction for the year of 2008.
- K. Other – Any land use not identified by the eleven other land uses characterized in this list.
- L. Site Development - A land parcel which had been significantly cleared of natural desert vegetation and is undergoing grading, filling, cutting, or trenching for infrastructure.

ADEQ created detailed GIS land use maps for a 6 km boundary surrounding the Maricopa, Cowtown, Pinal County Housing, and Stanfield monitors utilizing aerial photography to identify the land use classifications listed above (paved and unpaved roads were not characterized by ADEQ since these were contained within a detailed GIS layer created by PCAQCD). This GIS layer was later merged with a land use map created by PCAQCD to supplement those areas outside of the 6 km map but within the nonattainment area. The reason for recreating the land use map within a 6 km boundary of the 4 previously mentioned monitors in place of using the PCAQCD land use map was to increase land use resolution for those areas near each of the 4 modeled monitors. Creation of the 6 km map depended on the previously created PCAQCD land use map as well as analysis of 2008 aerial photography. Agricultural land within 6 km boundaries of the modeling monitors was then reviewed by the Cotton Research and Protection Council and further resolved to specify the types of crops grown on each crop field for the year 2008. ADEQ then merged this map with PCAQCD's 2008 construction permit map and PCAQCD's roadway map for Pinal County.

Note: Upon further review of the roads GIS layer, it was found that a few neighborhood alleyways and poorly defined unpaved roads located near the Pinal County Housing and Stanfield monitors were not accounted for the GIS map. These roadways were characterized as "*Unpaved Neighborhood Roads*" and were found to be significant contributors to modeled emissions on Stagnation design days at these two monitors.