

## Truck Parking Lots in city of Stonecrest

### Introduction:

According to the collaborative study conducted by the department of planning and zoning with the GIS department of the city of Stonecrest, distinguish that the city home to 17 truck parking lots at the moment. This study basically considers spatial characteristics of existing truck parking lots and underlines planning considerations on it.

### Research methodology:

Spatial characteristics of the existing truck parking lots recognized through city GIS map and relevant attributes data. Quantitative analysis and spatial considerations are basically used to derive information on spatial characteristics. Table I shows the attributes data used for the study.

Furthermore, study pay attention about the underline natural and physical characters to determine the land suitability of the area for existing and truck parking and future expectation of truck business.

Under spatial characteristics study pay attention on following considerations.

1.1 Truck parking lots and underline Zoning conditions

1.2 Truck parking lots and its paving material

1.3 Truck parking lots and the size of the land parcel.

Table I : Spatial characteristics of existing truck parking lots.

Location No	Address	Zone	Future Landuse	Acreage	Paving material
1	2071 Rock Chapel Road Lithonia, GA 30058	M	LIND	10.77	Gravel
2	1985 Rock Chapel Road Lithonia, GA 30058	M	LIND	14.73	Gravel
3	1979 Rock Chapel Road Lithonia, GA 30058	M	LIND	8.65	Gravel
4	1965 Rock Chapel Road Lithonia, Ga 30058	M	LIND	5.14	Gravel
5	1901 Rock Chapel Road Lithonia, GA 30058	M	LIND	21.54	Gravel
6	7301 Maddox Road Lithonia, GA 30058	M	LIND	10.97	Gravel
7	2129 Lithonia Industrial Boulevard Lithonia, GA 30058	M	HIND	9.12	Gravel
8	6630 Marbut Road Lithonia, Ga 30058	M	HIND	5.97	Gravel
9	1730 Lithonia Industrial Boulevard Lithonia, GA 30058	M	HIND	0.54	Gravel
10	6500 Marbut Road Lithonia, GA 30058	M-2	HIND	19.27	Gravel
11	1950 Jabco Court Lithonia, GA 30058	M-2	HIND	6.06	Gravel
12	6595 Marshall Boulevard Lithonia, Ga 30058	M-2	HIND	6.04	Gravel
13	2550 Lithonia West Drive Lithonia, Ga 30058	M	HIND	2.06	Not Gravel
14	1933 Jabco Court Lithonia, Ga 30058	M-2	HIND	10.51	Not Gravel
15	1913 Rock Chapel Road	M	LIND	0.54	Not Gravel
16	1617 Rogers Lake Road Lithonia, Ga 30058	M	LIND	16.78	Not Gravel
17	1600 Lithonia Industrial Boulevard Lithonia, Ga 30058	M	HIND	17.8	Not Gravel

## Analysis of the results:

### 1. Spatial distribution of existing truck parking lots.

Map1 : Spatial Distribution of existing truck parking lots.

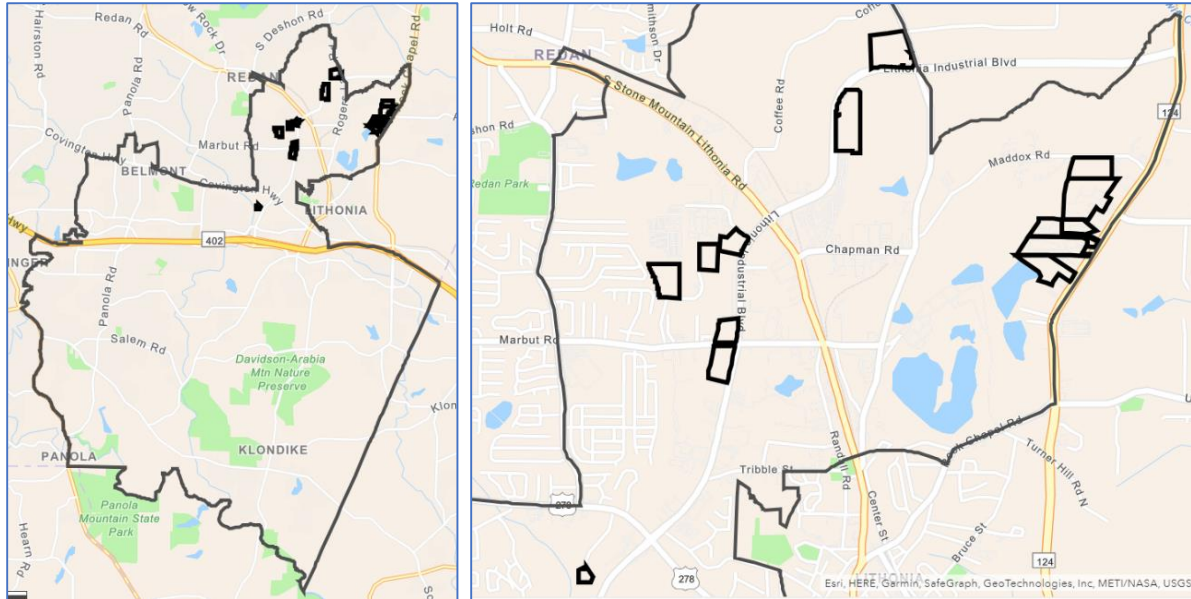
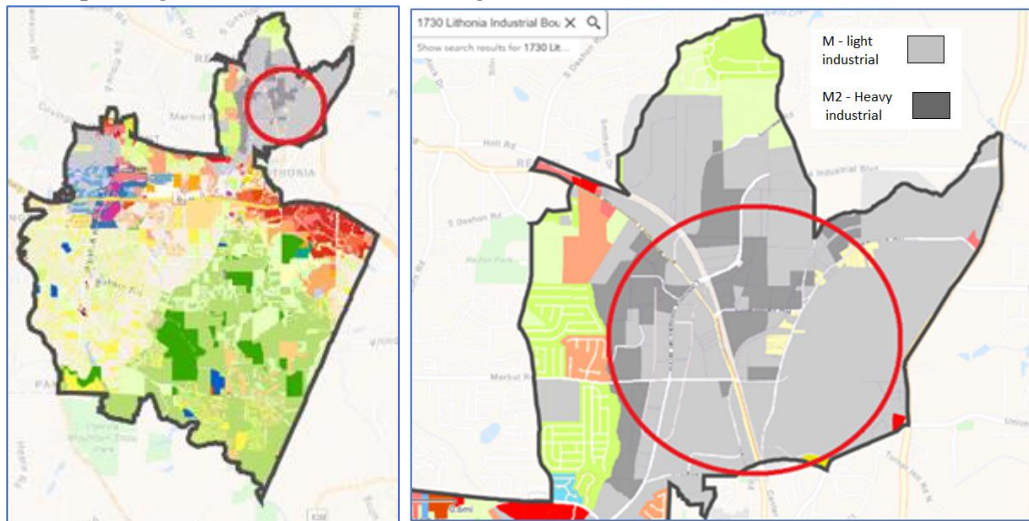


Image 1: Areal view of existing truck parking lots

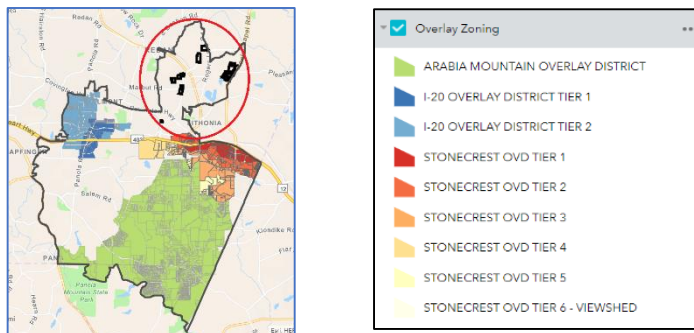


## 1.1 Truck parking lots and Underline Zoning

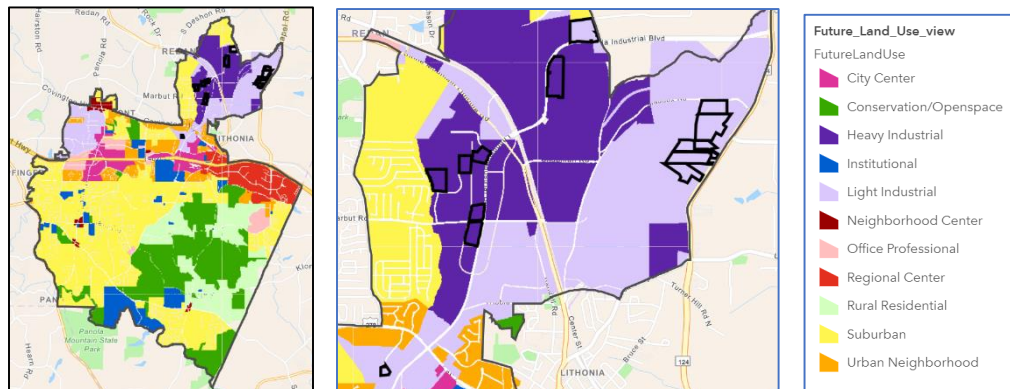


The city of Stonecrest is home to 17 truck parking lots. According to zoning classification of the city, 13/17 (76.47%) of existing parking lots belongs to “M-light Industrial zoning district while 4/17 (23.53%) of parking lots belongs to M2- Heavy Industrial zoning district.

Any existing truck parking lots do not belong to The City of Stonecrest overlay districts.



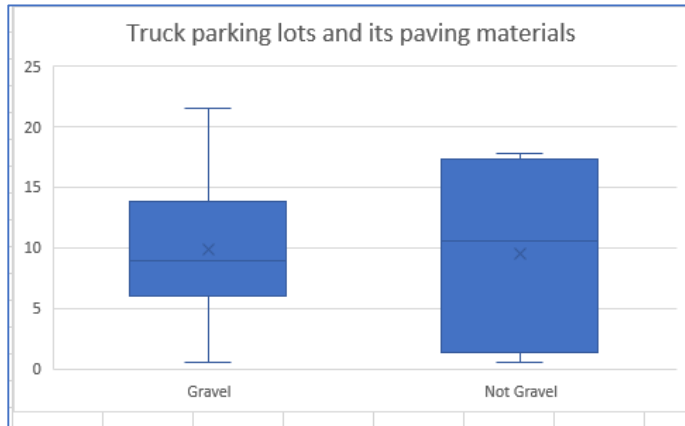
Future land use shows that 8/17 (47.1%) of the existing truck parking lots belong to Light Industrial while 9/17 (52.9%) belongs to Heavy industrial category. It means 5/17 (29.4%) of truck parking lots which are under M- light industrial category has Future lands use of Heavy industrial.



### 1.2 Truck parking lots and its paving materials

According to the study 12/17(70.6%) of existing parking lots use gravel as their complete or partially paving material while 5/17 (29.4%) of parking lots use other materials such as asphalts concrete or mixed paved materials.

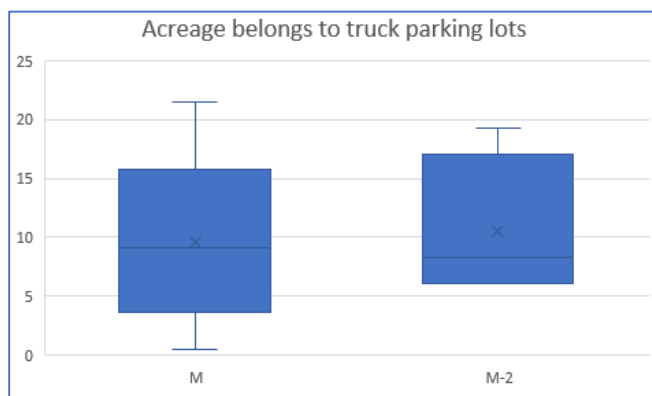
When considering size of the land parcel and its paving materials, Gravel parking lots varies from 0.54 acres to 21.54 acres while non gravel lot size varied from 0.54 acres to 17.8 acres.



### 1.3 Truck parking lots and the size of the land parcel.

The study realizes that the total average land size belongs to existing truck parking lot is 9.7 acres. Based on that the department decided to maintain minimum 10 acre of land area for proposing or newly constructing truck parking lots

When considering the existing truck parking lots belongs to M-light industrial underling zoning category the size of the land parcel varied from 0.54 acres to 21.54 acres. Existing truck parking lots belong to M2-Heavy industrial underling zoning category varied from 6.04 acres to 19.27 acres.



## **2. Location suitability analysis**

Based on existing truck parking routes of the city of Stonecrest we can recognize cluster of truck routes junctions in northern part of the city limits. Map 2.1 shows the map of existing truck routes. According to the map, the highest potential agglomeration of truck parking lots and other relevant business is the northern portion of the city where the 95% existing truck parking lots located. Especially the surrounding area home to 6 truck route junctions. Existing truck routes basically driven closer to almost all the overlays of the city. But the northern portion of the area where does not belong to any overlay and mostly M-light Industrial and M2-Heavy Industrial underline zoning can identify favorable land use type for more sensitive establishment such as truck related industry. Map 2.3 shows the spatial distribution of existing truck routes and underline Zoning conditions.

The city of Stonecrest water resource also become an important factor in truck related business because the relevant economic activity makes it more vulnerable to water pollution. According to the study more than 60% of the existing truck parking lots are located closer to city water bodies. Therefore, staff suggest arising strict regulations on truck parking and its related items to prevent surface water pollution. Map 2.3 shows the spatial distribution of existing truck parking lots and water bodies.

When considering the underline soil condition, study faces a challenge due to not availability of data on some land areas. As well as considerable amount of land belongs to no soil and bodies of water cover. But according to the existing data we can recognize that the northern portion of the city basically consists of Ultisols, Inceptisols, Entisols soil. Map 2.4 shows the soil distribution of the northern portion of the city of stonecrest. All three soil types are closely associated with parent materials. Closely located to bed rock and not having well developed soil horizon can lead to ground water pollution such as contaminating aquifers. Table 2.1 shows the characteristics of Ultisols, Inceptisols and Entisols soil. Based on the underline soil characteristics the department suggest following strict regulations to prevent ground water pollution on truck parking.

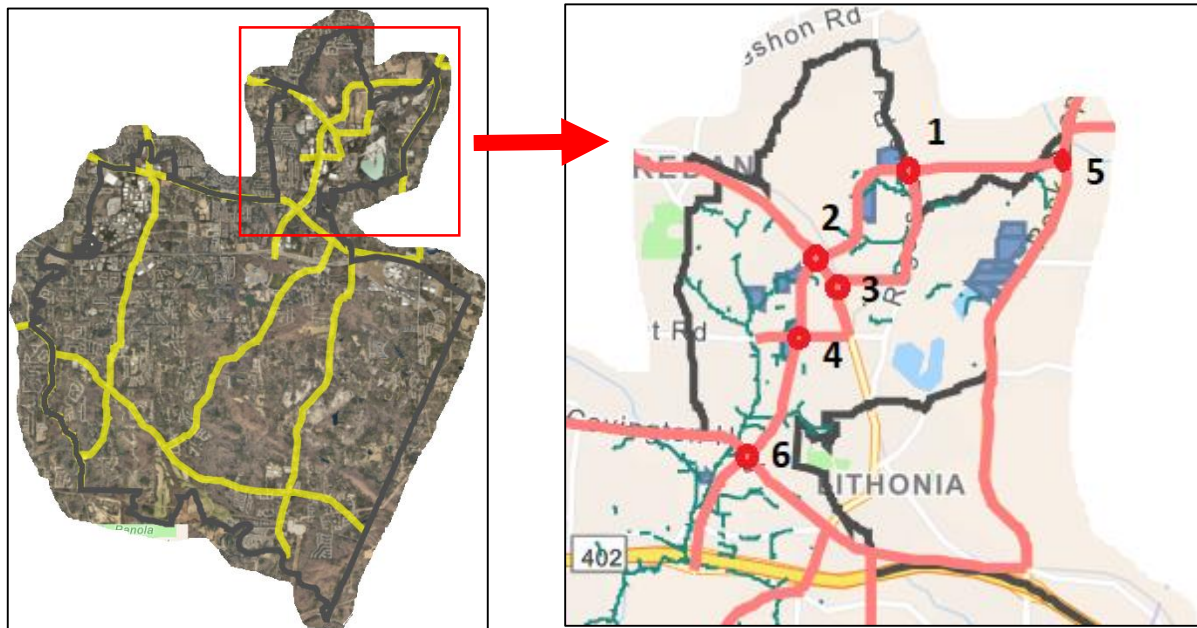
### **Conclusion.**

Considering the environmental and social sensitivity of truck and truck related industry, the department of planning and zoning suggest one central agglomeration of truck business within the city premises. The permitted land area only limited to M-light industrial and M-2- Heavy industrial zoning districts of northern portion of the city.

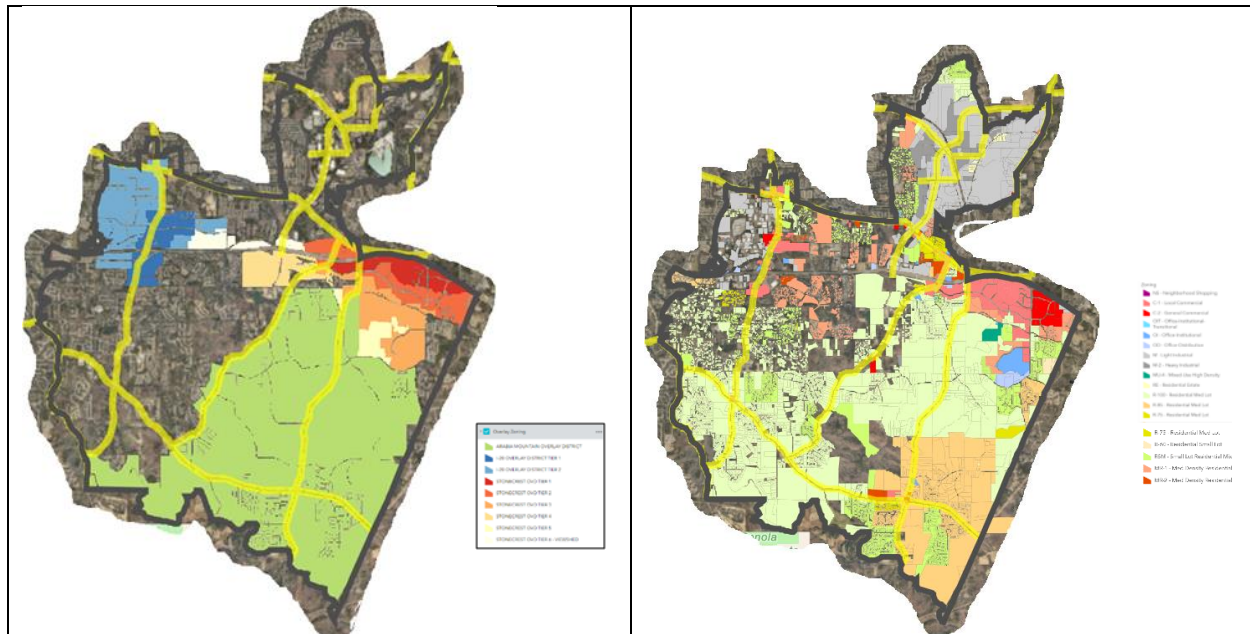
The city ordinance on truck parking should characterize to prevent all possible natural and social unrest that can emerge through existing truck parking lots and future expansions.



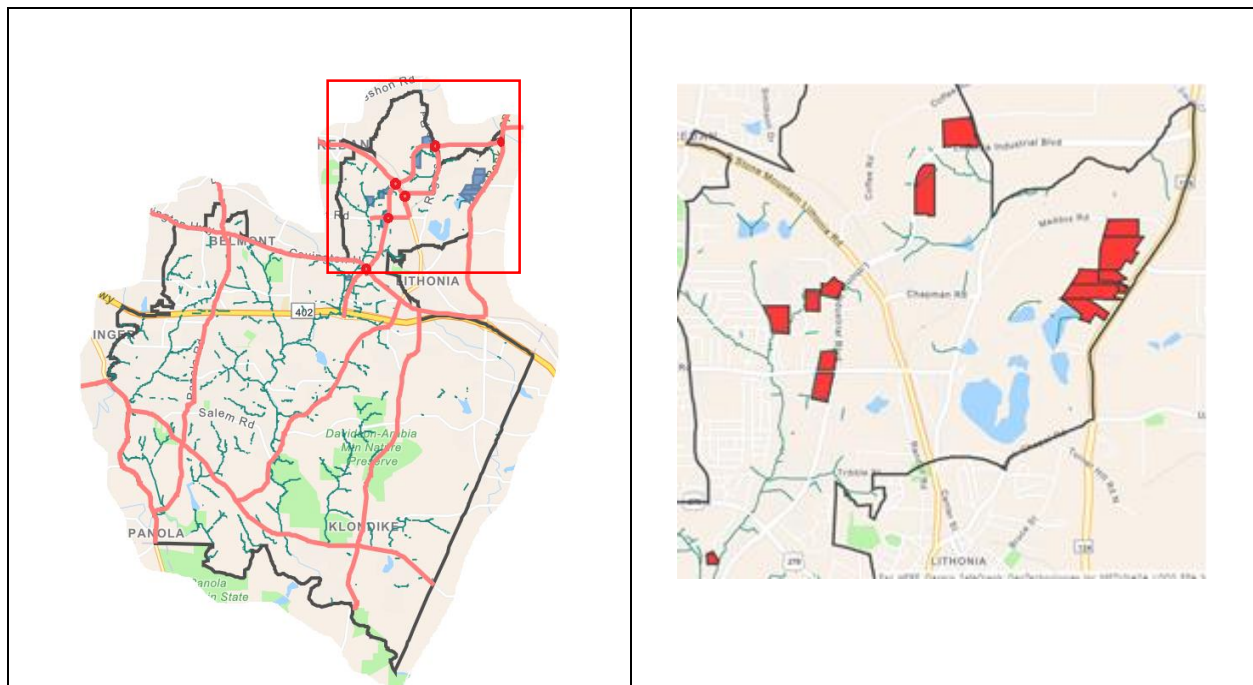
Map 2.1 The map of existing truck routes.



Map 2.3 The spatial distribution of existing truck routes and underline Zoning conditions.



Map 2.3 The spatial distribution of existing truck parking lots and water bodies.



Map 2.4 Soil Distribution of The Northern Portion of The City of Stonecrest

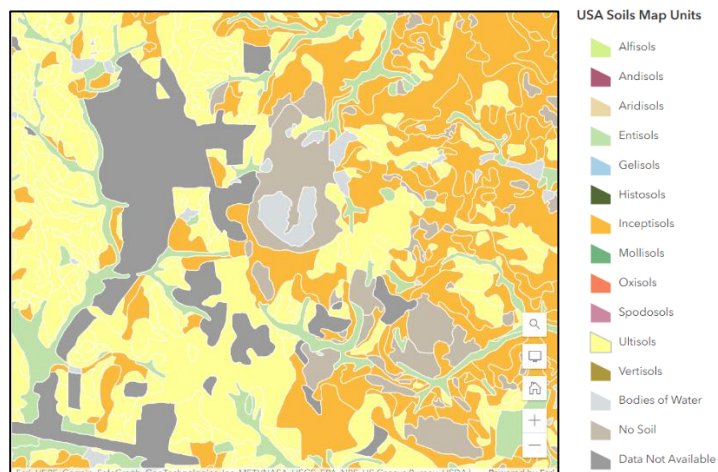


Table 2.1 Characteristics of Ultisols, Inceptisols and Entisols soil.

Ultisols	Inceptisols,	Entisols.
Ultisols are rather extensive in warm, humid regions of the US. They tend to represent rather advanced soil development, and thus are found on relatively old land surfaces.	Inceptisols are a soil order in USDA soil taxonomy. They form quickly through alteration of parent material. They are more developed than Entisols.[1] They have no accumulation of clays, iron oxide, aluminium oxide or organic matter. They have an ochric or umbric horizon and a cambic subsurface horizon.	Entisols, which exhibit little soil profile development, are characteristic of areas where soil parent materials have quite recently been deposited, e.g. on recent river alluvium.

## **Reference**

<https://stonecrestga.maps.arcgis.com/apps/mapviewer/index.html?layers=df5d484b8c5d4943b7c0f24866040df9>

<https://stonecrestga.maps.arcgis.com/apps/mapviewer/index.html?layers=06e5fd61bdb6453fb16534c676e1c9b9>

[Stonecrest, GA - Planning & Zoning \(stonecrestga.gov\)](https://stonecrestga.gov/planning-zoning)

[https://dlg.usg.edu/record/dlg\\_soilsurveys\\_soilsurvey-dekalb1914?canvas=0&x=5577&y=7102&w=5009](https://dlg.usg.edu/record/dlg_soilsurveys_soilsurvey-dekalb1914?canvas=0&x=5577&y=7102&w=5009)

[https://en.wikipedia.org/wiki/Soil\\_in\\_the\\_United\\_States](https://en.wikipedia.org/wiki/Soil_in_the_United_States)

<https://en.wikipedia.org/wiki/Inceptisol>