

GIS and Solid Waste

Site assessment of
illegal dump sites
using GIS!



Site Assessment Form

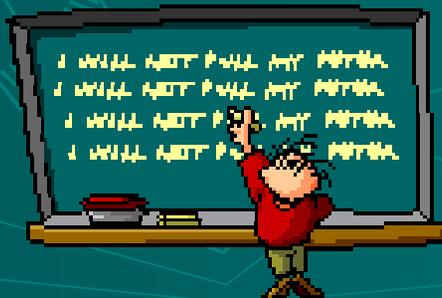
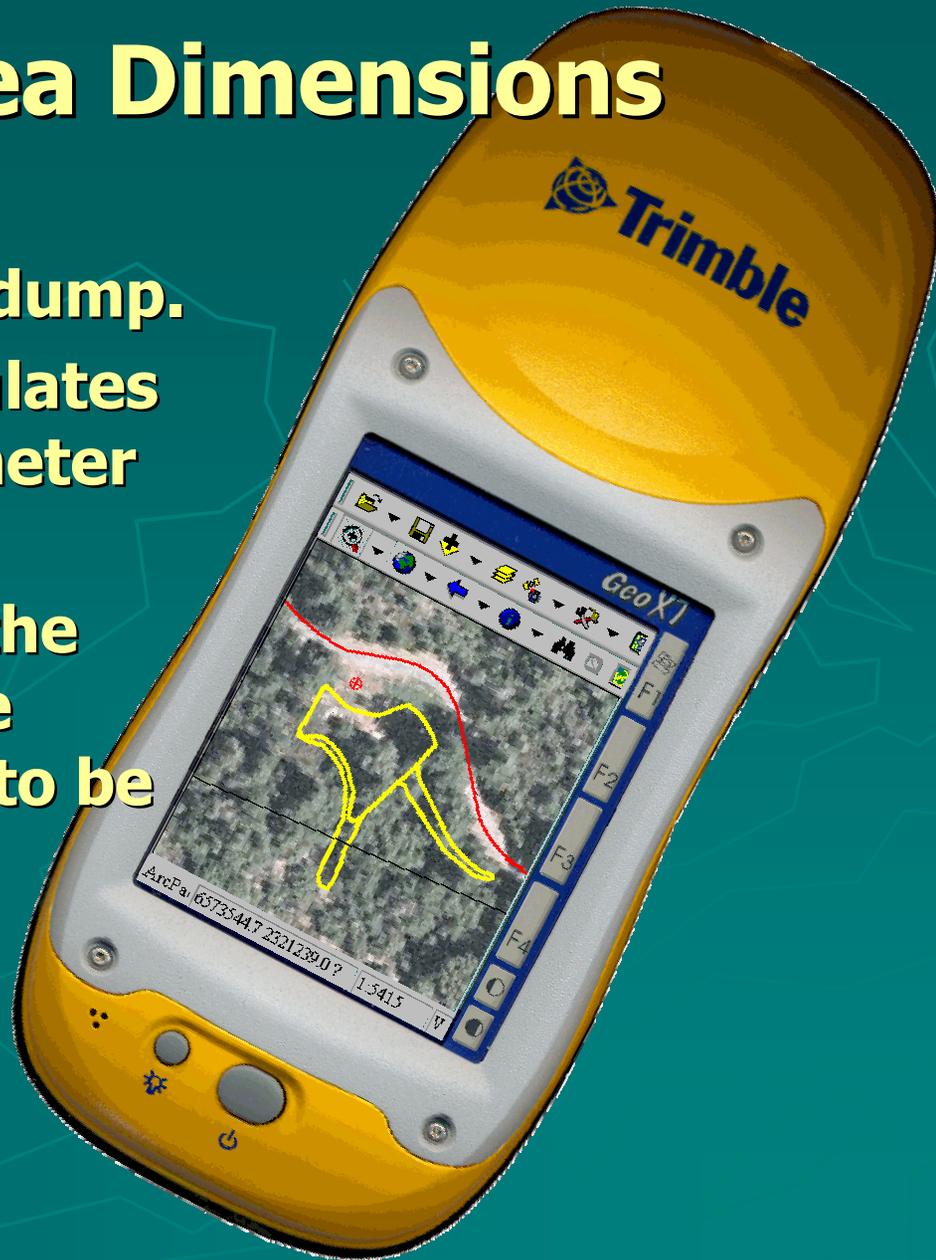
The State asks for the following information:
(among other)



- ❶ Waste area(s) dimensions
- ❷ Soil Type
- ❸ Mean annual precipitation
- ❹ Is waste area within a flood plain? (Y/N)
- ❺ Slope pitch
- ❻ Show detailed site map(s)

Waste Area Dimensions

- ❑ GPS the outline of the dump.
- ❑ The GIS software calculates the surface area, perimeter etc.
- ❑ Estimate the depth of the dump and calculate the rough volume of trash to be removed.



Disposal Site Characteristics

SITE ASSESSMENT FORM

(Attach additional description or explanation as needed
or include in comment Section VIII.)

Site name: Gollum's Precious SWIS No. 05-AA-9999

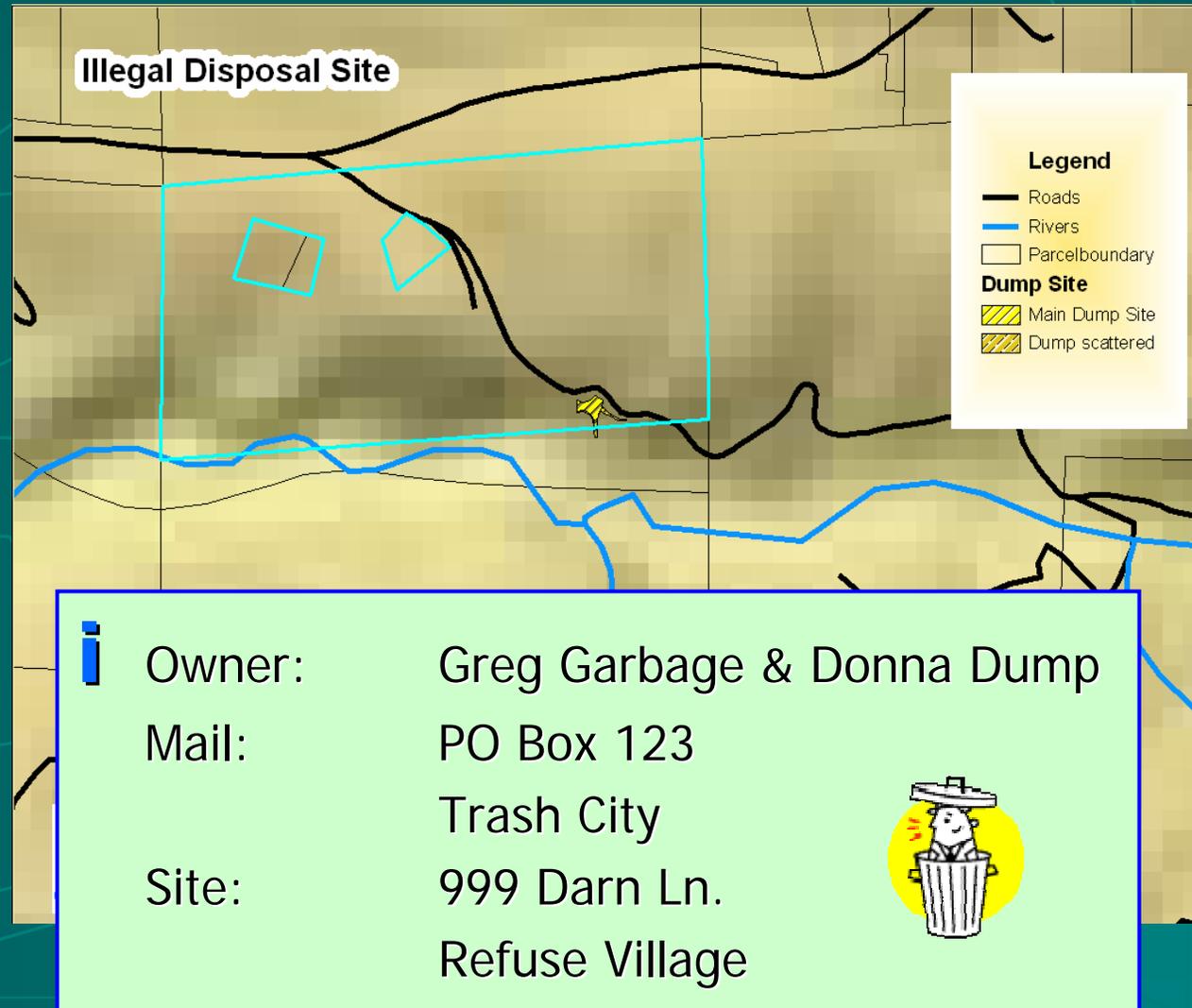
I. Disposal Site Characteristics

A. Waste Area(s) Dimensions

1. Area and volume: 0.11 acres 526 cubic yards
2. Estimate maximum depth of waste: 4.0 feet
3. Estimate average depth of waste: 3.0 feet

Identify the Responsible Party

- Locate the site.
- Verify the property the site is located on.
- Identify the responsible party.



Access additional Information from various shape files

Soil

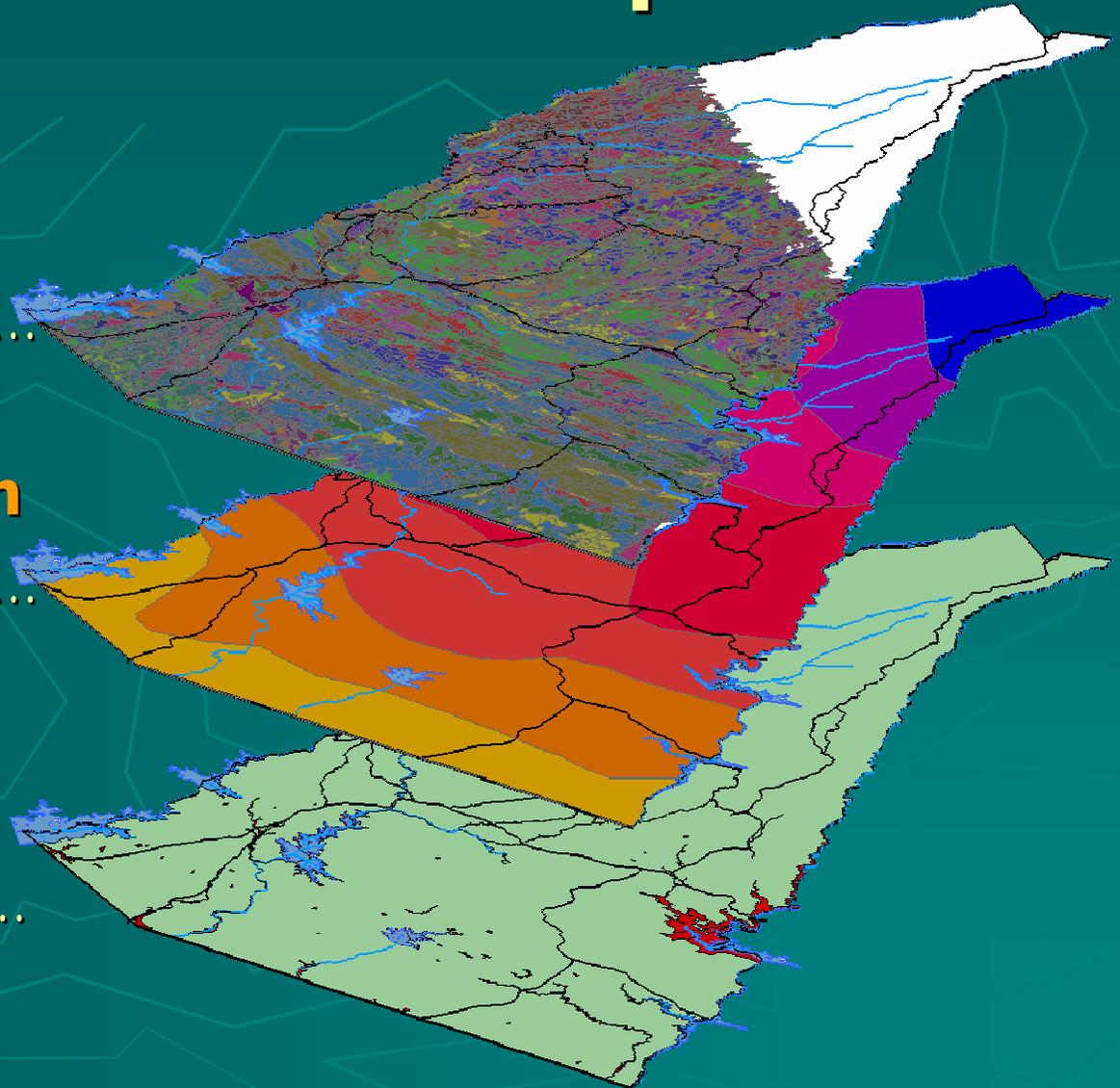
Mariposa
Formation ...

Precipitation

27 – 35 in ...

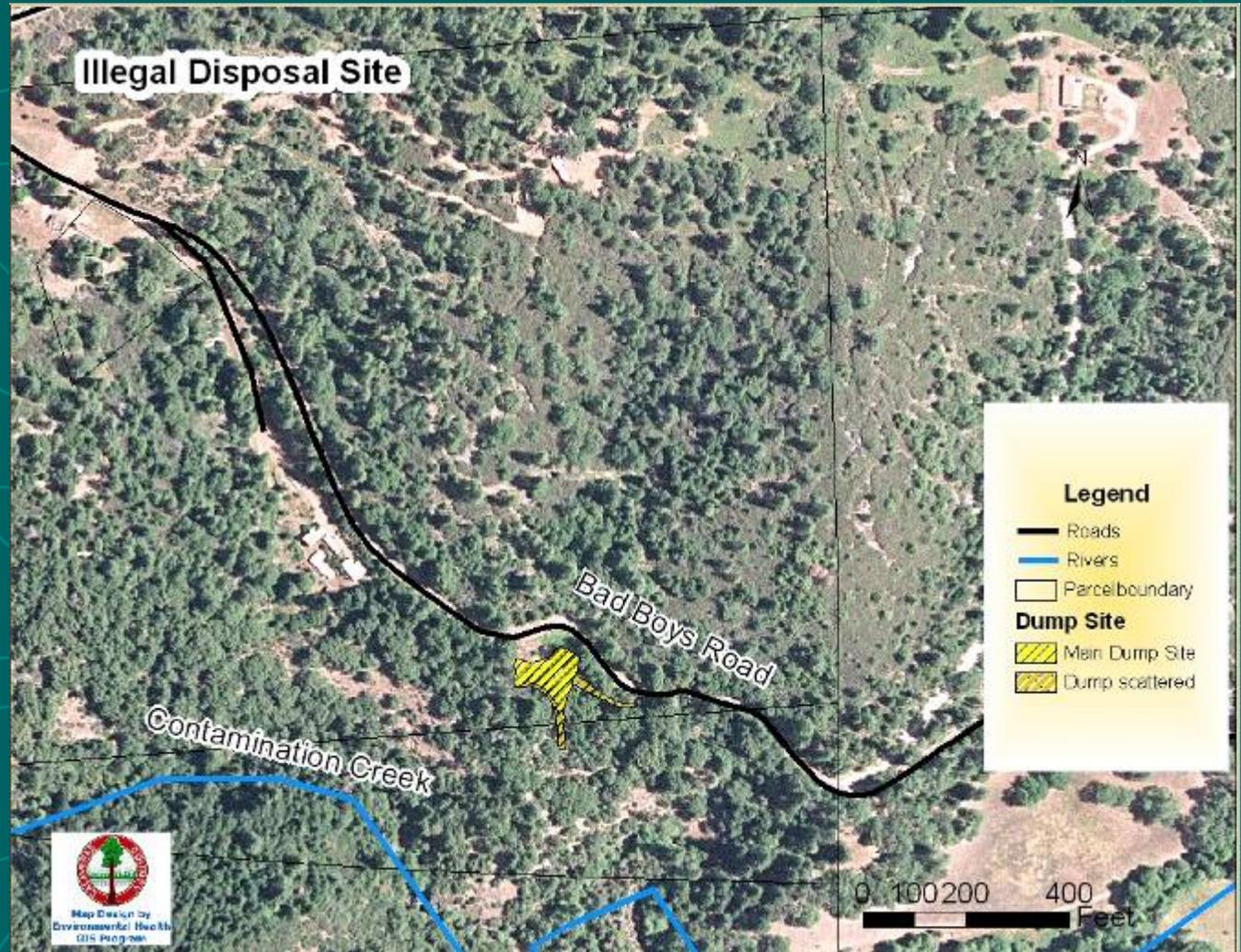
Floodplain

Not in
floodplain ...



Risk Assessment

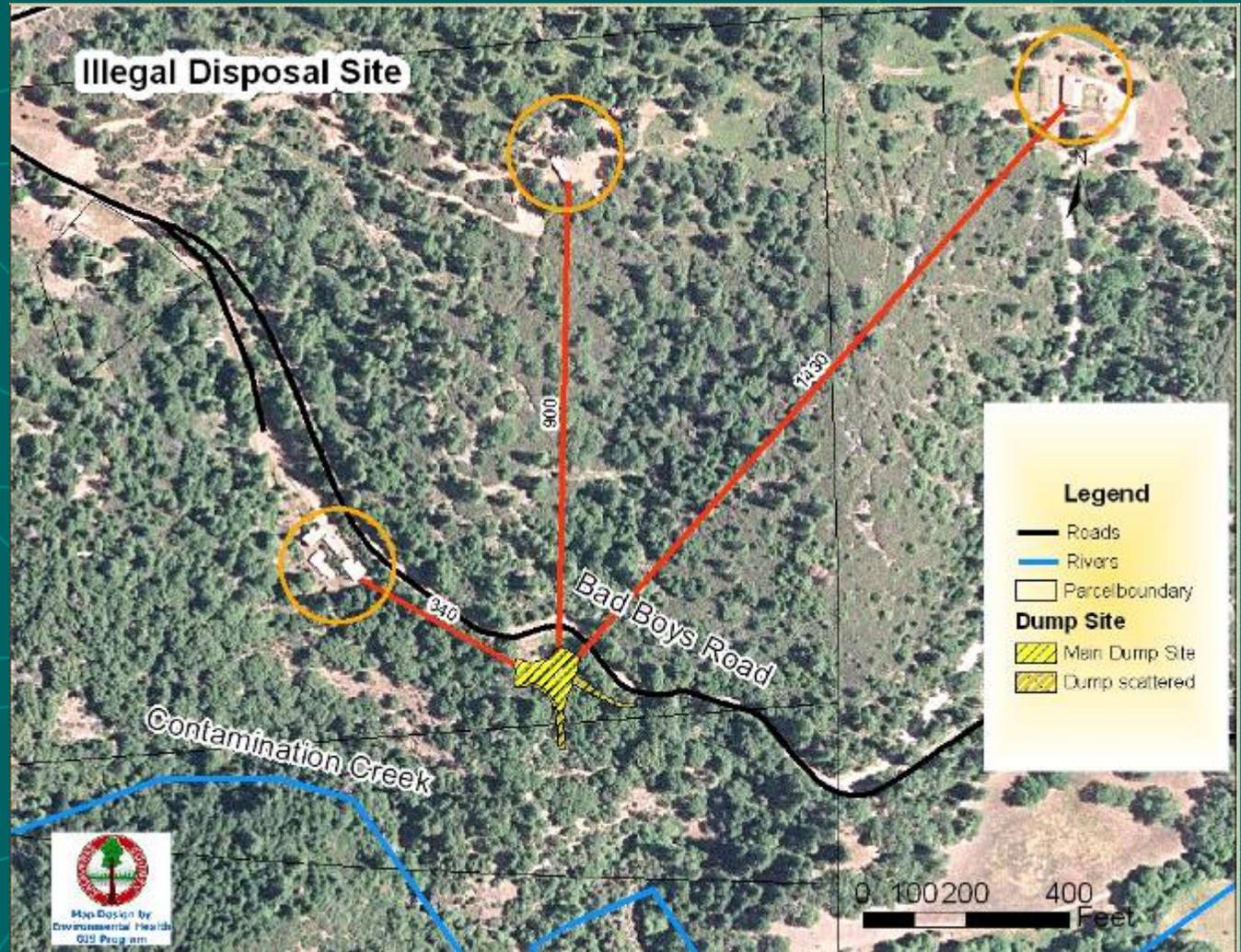
Put the dot
on the map



Risk Assessment

Put the dot
on the map

Measure to
the dwellings

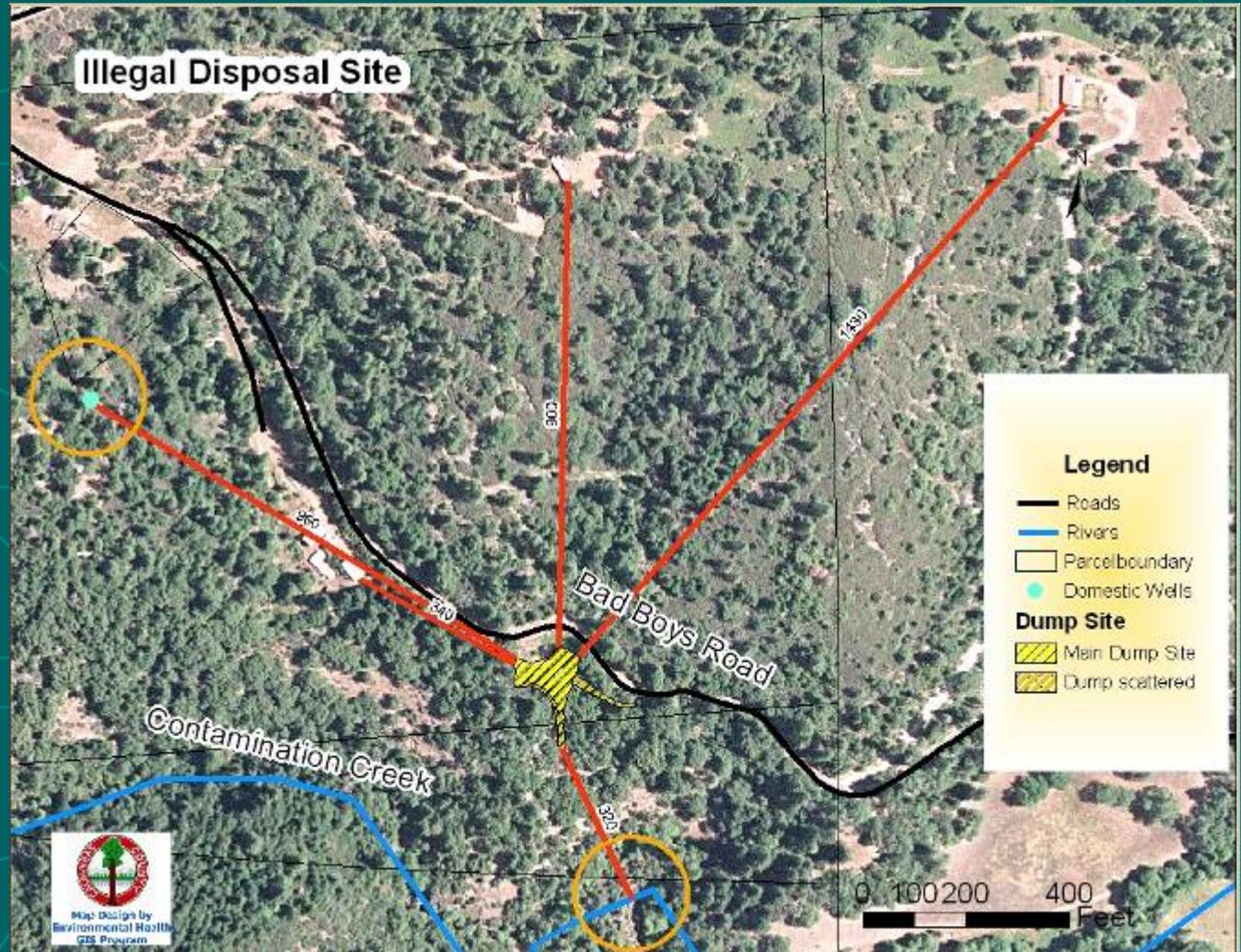


Risk Assessment

Put the dot
on the map

Measure to
the dwellings

Measure to
well and creek



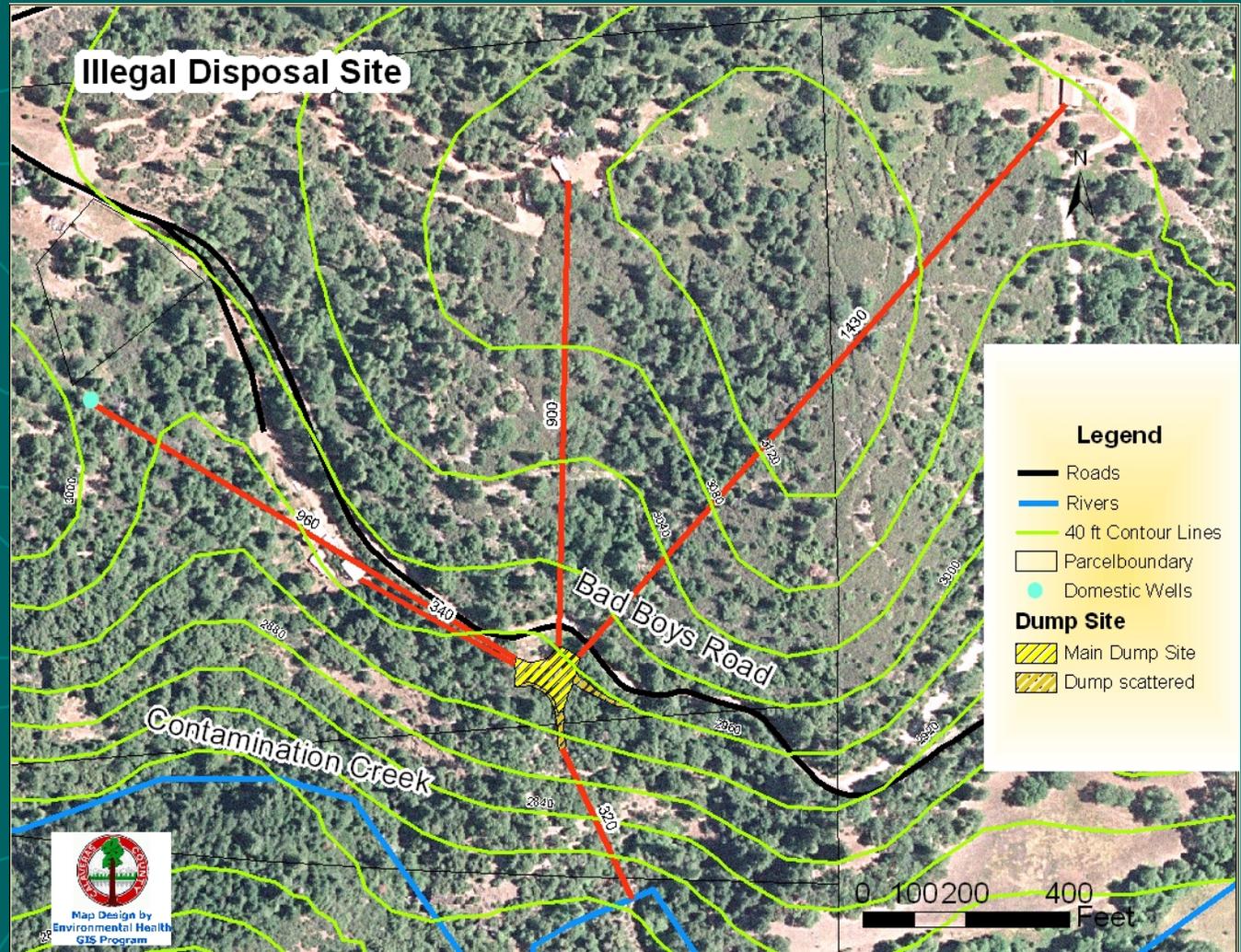
Risk Assessment

Put the dot
on the map

Measure to
the dwellings

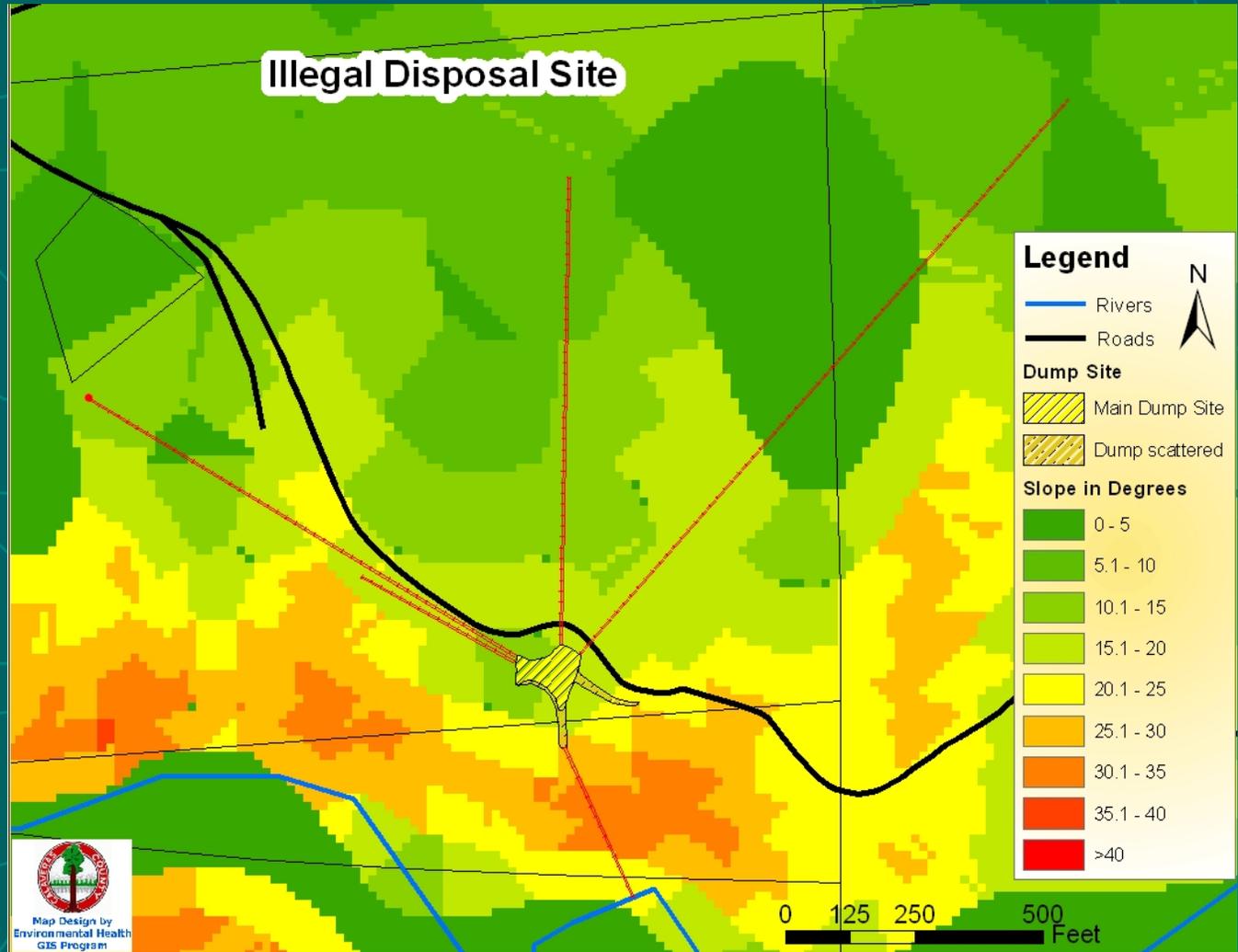
Measure to
well and creek

Add contour
lines for the
relief



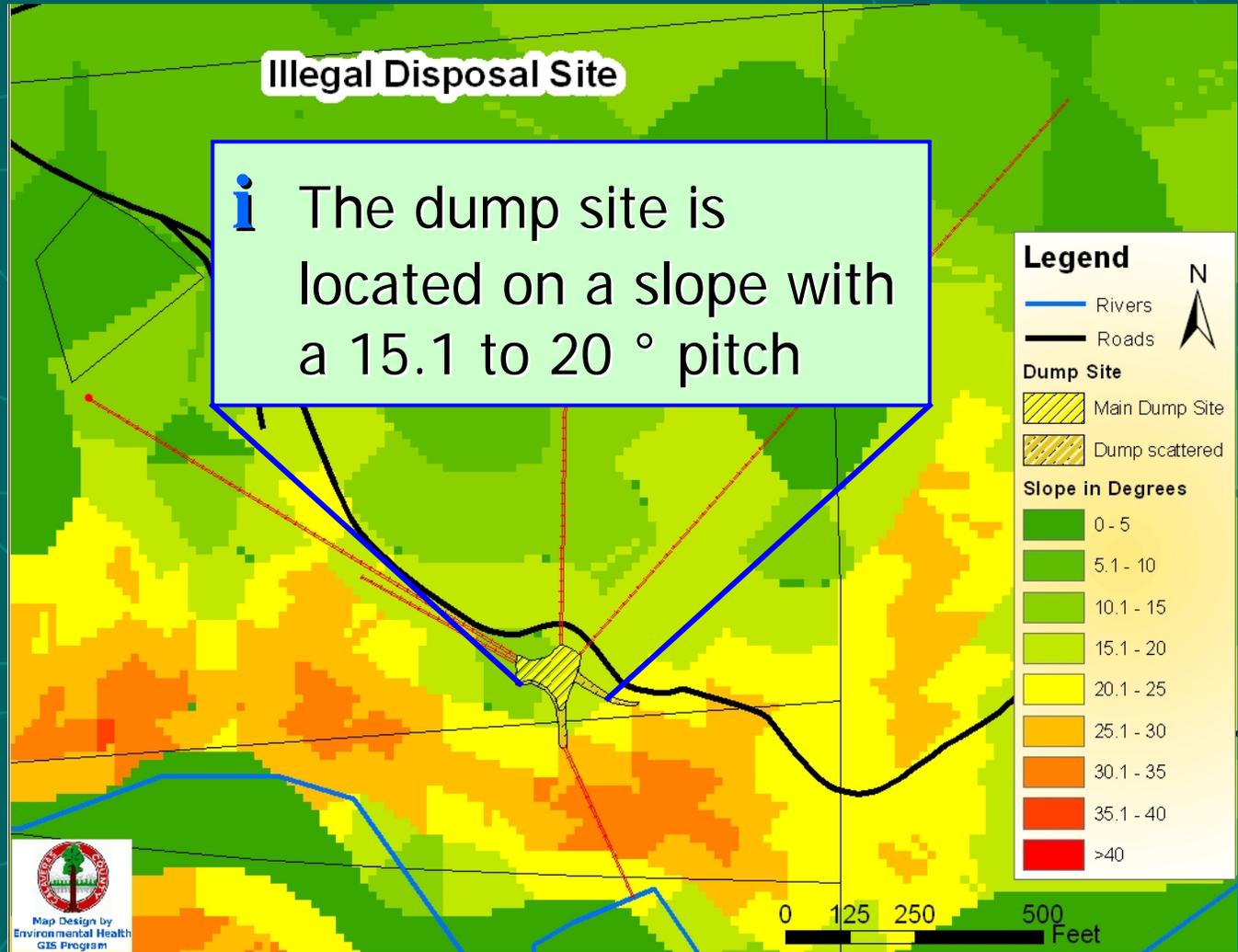
Slope

The GIS software calculates the pitch of the slope



Slope

The GIS software calculates the pitch of the slope



Risk Assessment

-
-
-

E. Is waste area within a 100-year flood plain? (Y/N): **NO**

F. Show the following items on a site map(s):

1. Property boundaries
2. Waste disposal area(s) boundary
3. Structures on or within 1000 ft. of waste **340', 900' and 1430'**
4. Topographical Contours
5. Access points and roads
6. Site security systems **NO**
7. Surface water bodies and drainage patterns (creek)

Maps are enclosed!

-
-
-

E. Are slopes greater than 3:1 (33% or 18 degrees)? (Y/N) **YES**

F. Are slopes greater than 1.75:1 (57% or 30 degrees)? (Y/N) **NO**

-
-
-



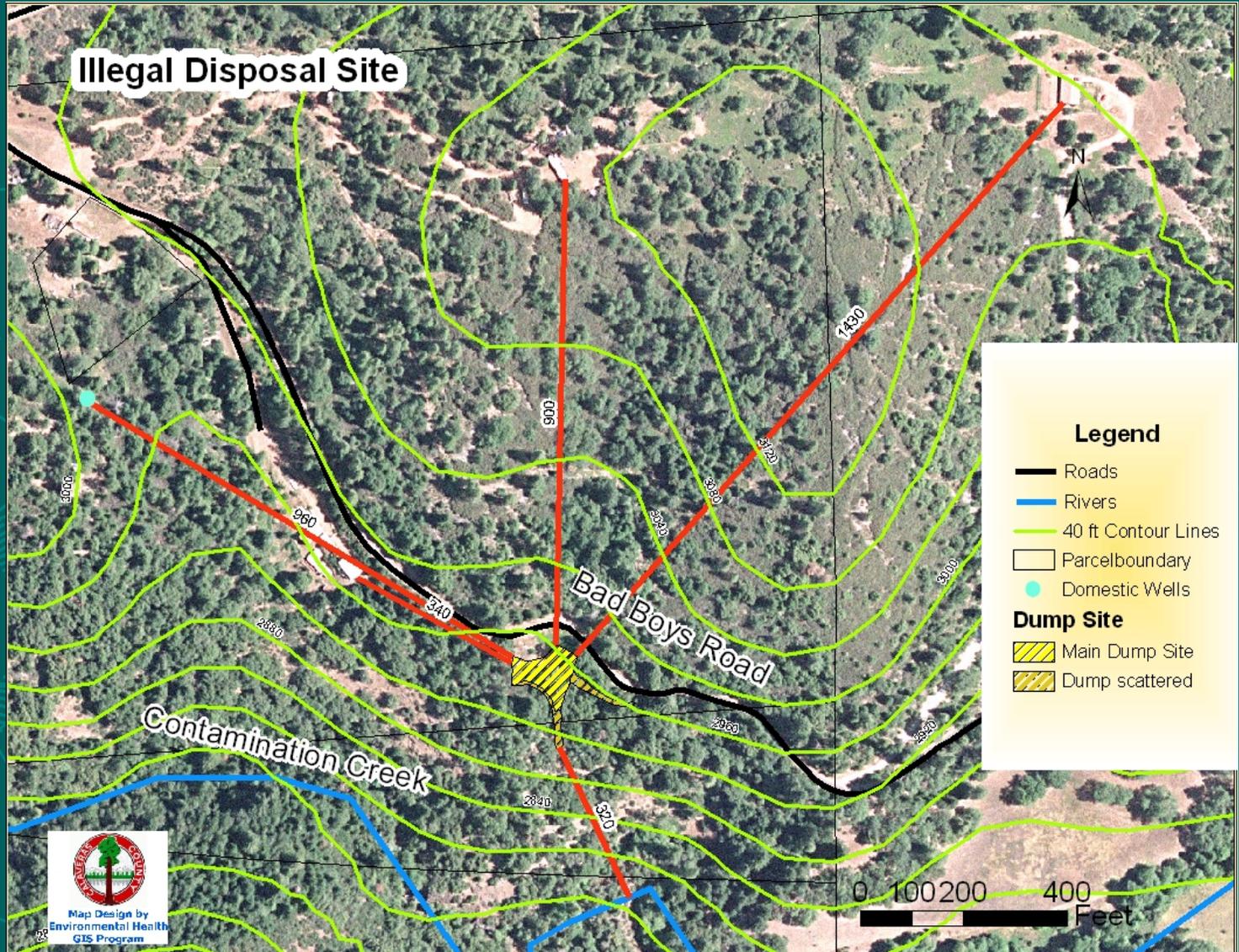
Legend
 roads
 ers
 t Contour Lines
 celboundary
 nestic Wells
ite
 n Dump Site
 mp scattered



Put the
 on the
 Measu
 the dv
 Measu
 well a
 Add c
 lines f
 relief

Visualization of Dump Sites

Include maps with the Site Assessment Form



Visualization of Dump Sites

If appropriate include a 3D view of the dump site.



Remediation of Illegal Dump Sites

Software requirements...

Tools applied...

▶ **GPS Unit**

▶ **Select (attribute)**

▶ **Measure**

▶ **Slope Calculation**

▶ **3D visualization**

**Pathfinder Office,
ArcPad or TerraSync**

ArcView

ArcView

3D-Analyst

3D-Analyst

