

Arc Map

, **Arc GIS**

ArcGIS[®] 9

Using ArcMap[™]



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“Using Arc MAP
Arc GIS 9.1

Tutorial.pdf”
ESRI

dawod_gomaa@yahoo.com
dawod_gomaa@hotmail.com

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Tutorial Data CD

.Arc GIS 9

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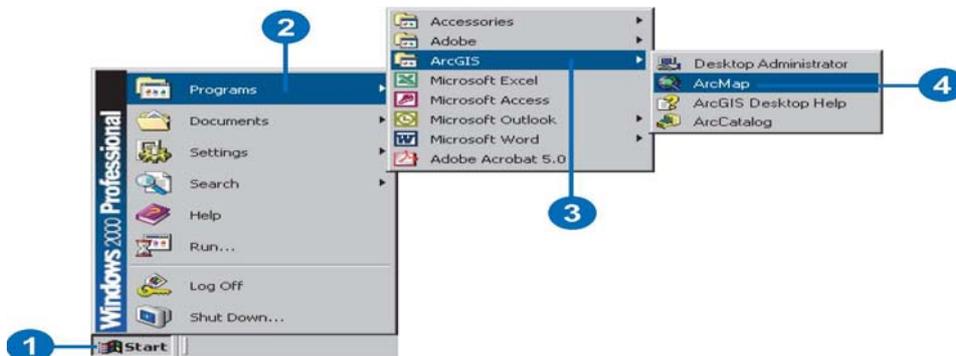


Tutorial Data CD

ArcGIS
C:\ArcGIS\ArcTutor\Map

: Arc Map

Start
Programs
Arc GIS
Arc Map



Open an existing map

Browse for maps



C:\ArcGIS\ArcTutor\Map
airport.mxd

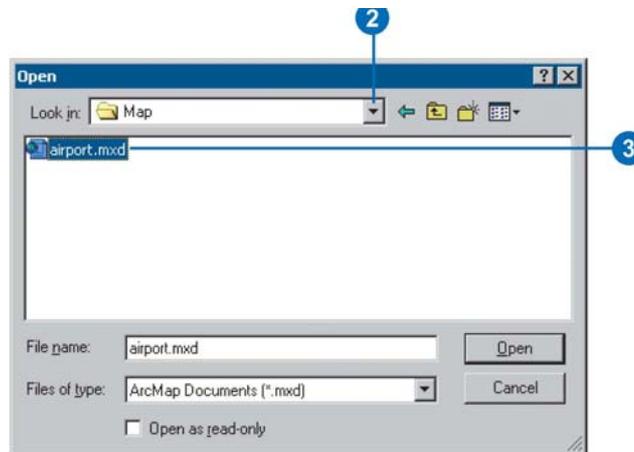


Table of

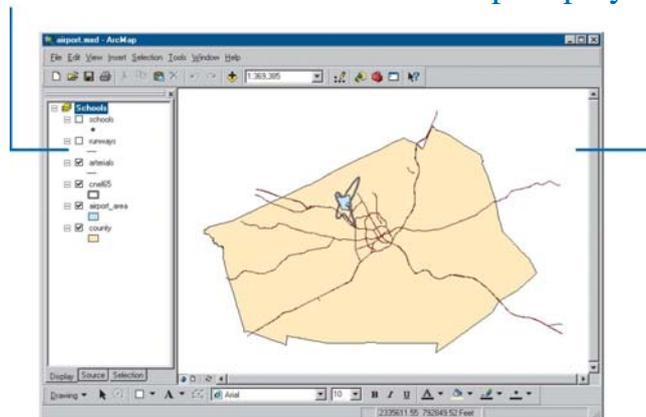
Layers
Map display area

:

contents

Table of contents

Map display area



:

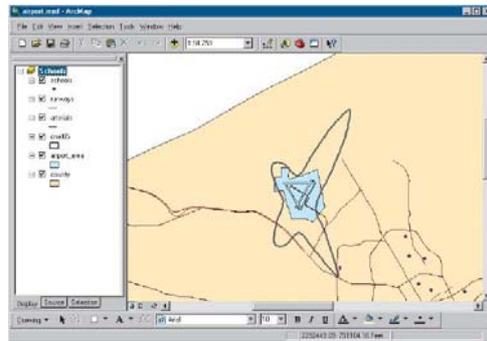
Schools
runways
arterials
Cnel65
airport_area
county

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(x

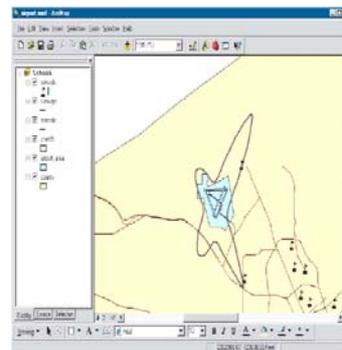
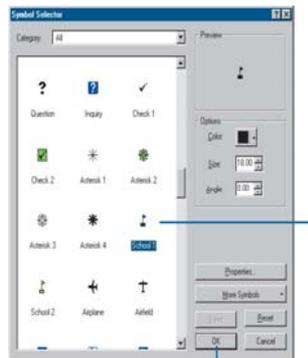


Arc Map

School

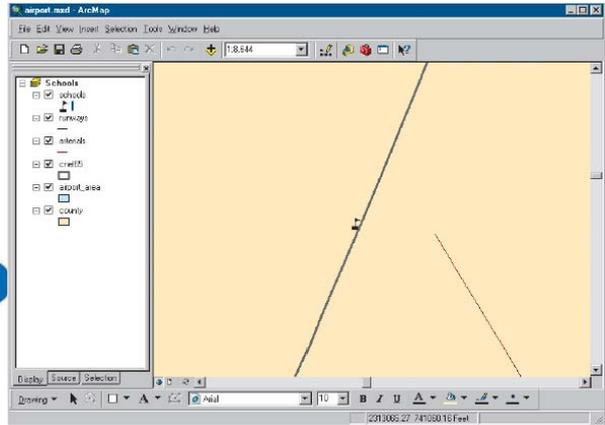
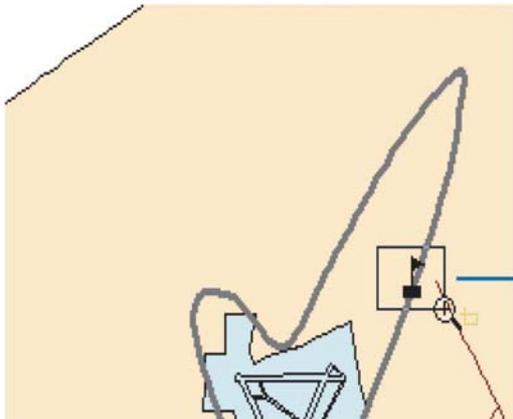
Schools

OK



()

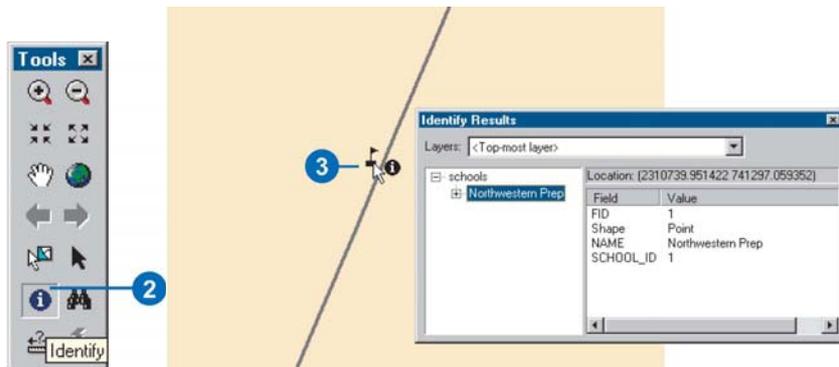
Zoom In



(i

) Identify

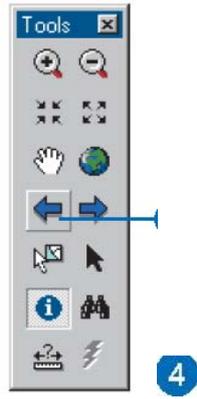
Northwestern Prep



)

Back

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Draw

Text

) New Text

(A

Enter



1



3



Data View

Layout View

Arc Map

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Fixed Zoom Out

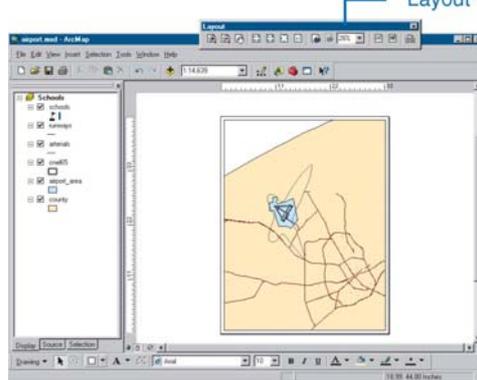
Layout

View

()

.View

Layout toolbar



) Page and Print Setup

.(

File

Use Printer Paper Settings

)

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Scale Map Elements

proportionally to changes in Page Size

Landscape

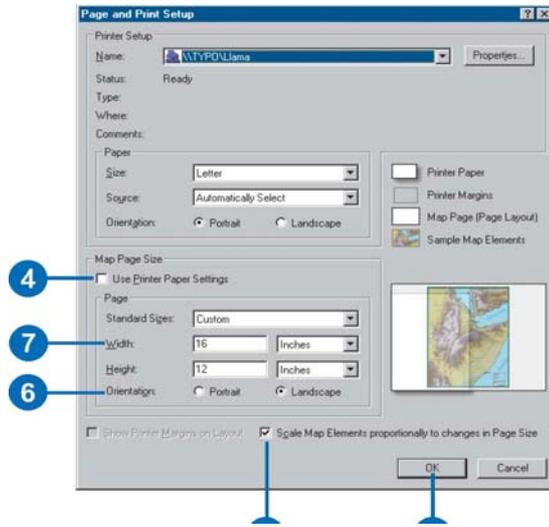
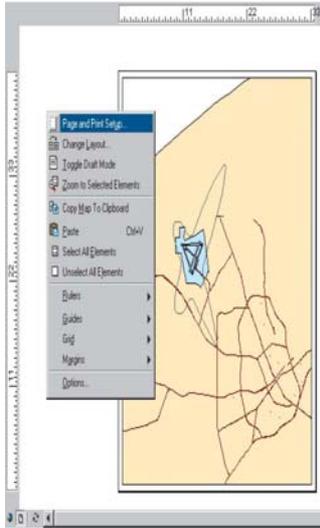
)

height

width

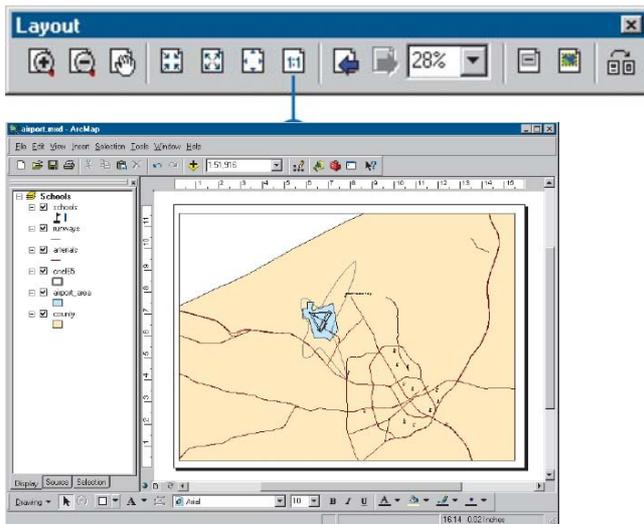
.(

.OK

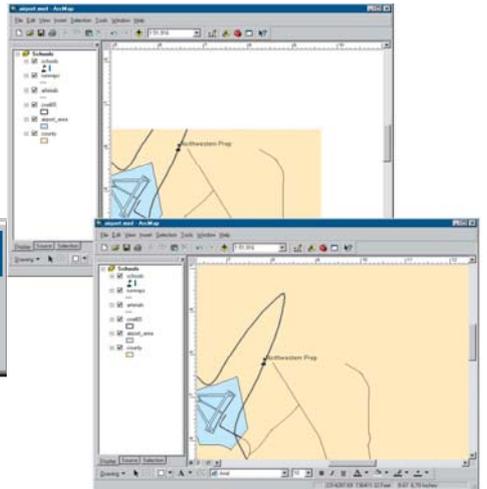
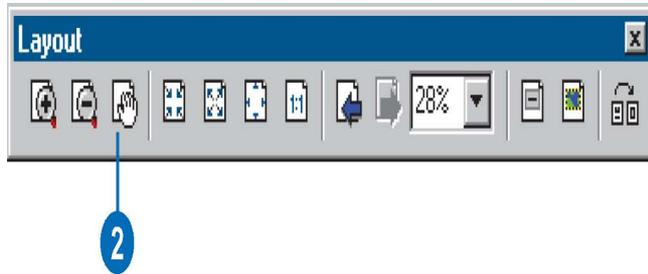


Layout View

Zoom to 100% %



Pan



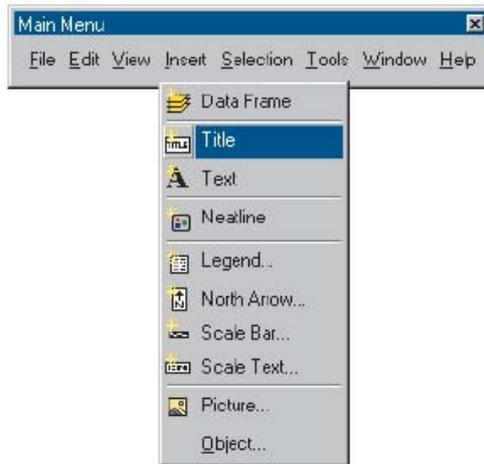
Arc Map

Title
Schools and Noise :

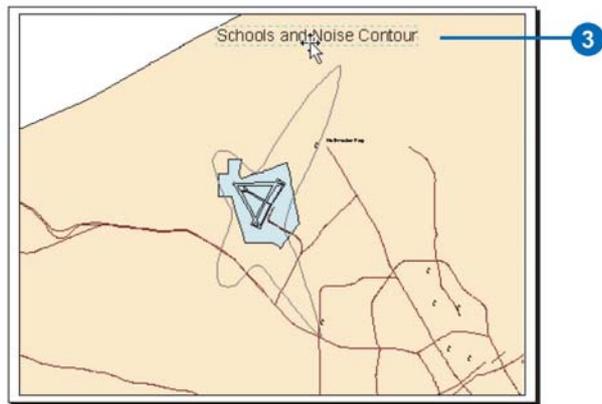
Insert

.Enter

Contour



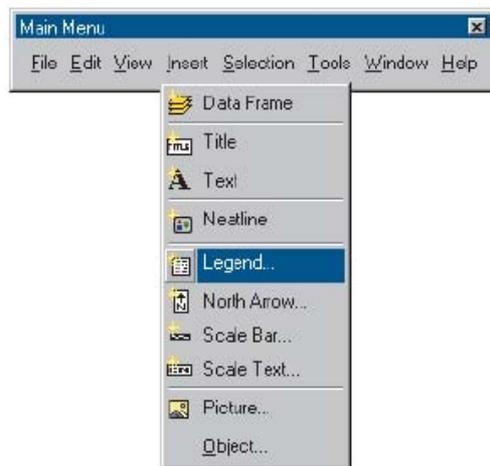
()



Font

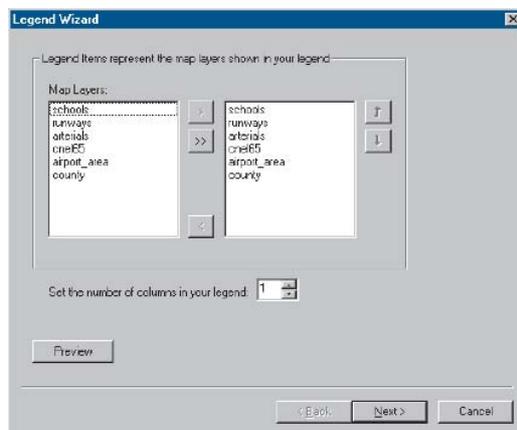
Legend

Insert



()

Next
Finish



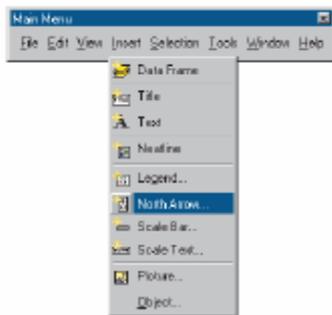
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North Arrow

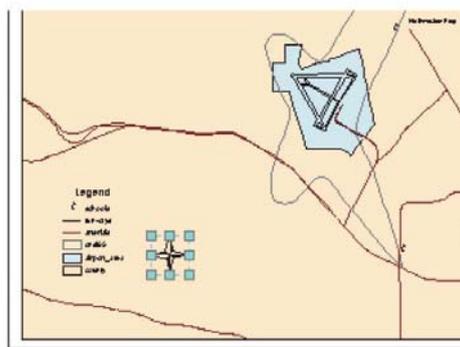
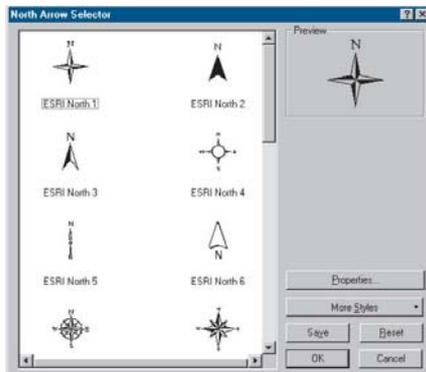
Insert

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OK

ESRI North 1



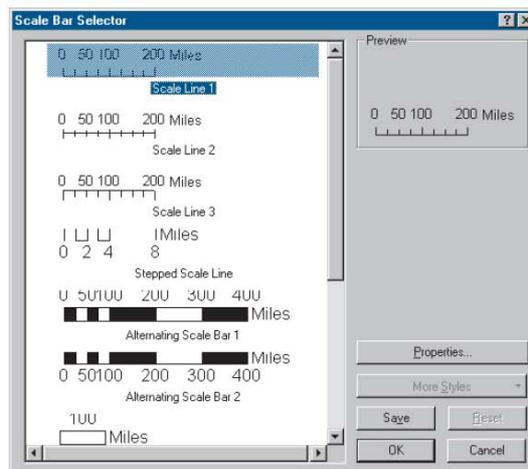
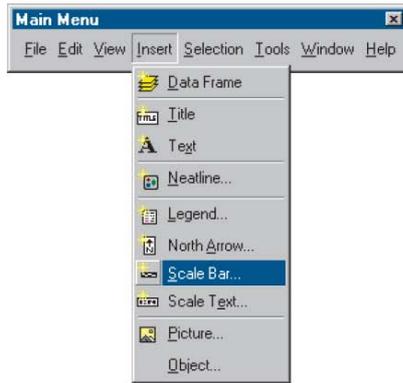
Scale Bar

Insert

:

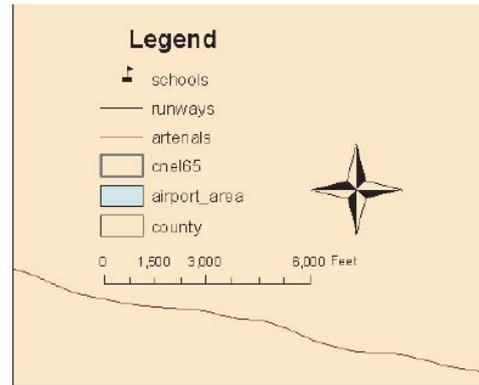
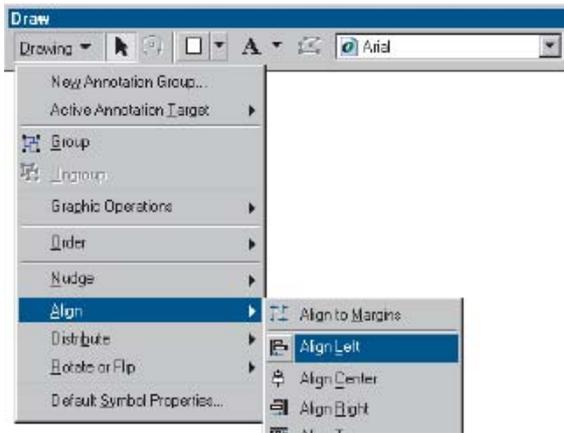
.OK

Scale Line 1

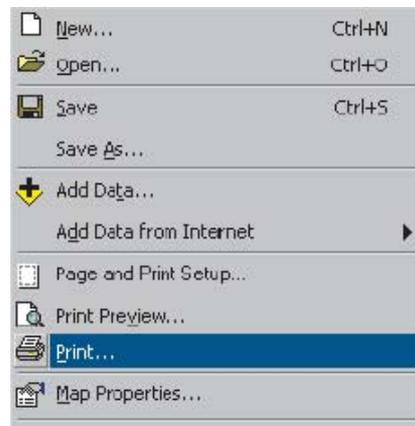


Align Shift () -
Draw Drawing -
Align Left

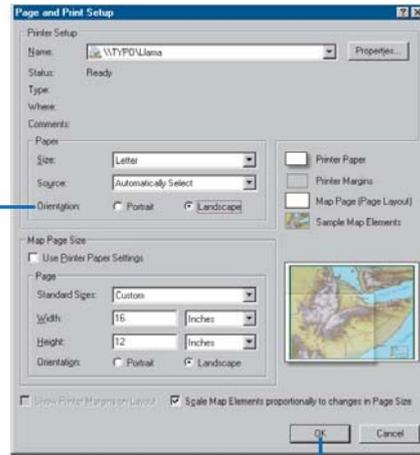
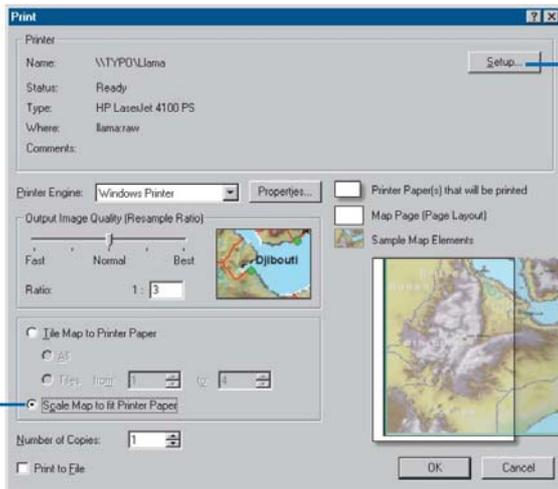




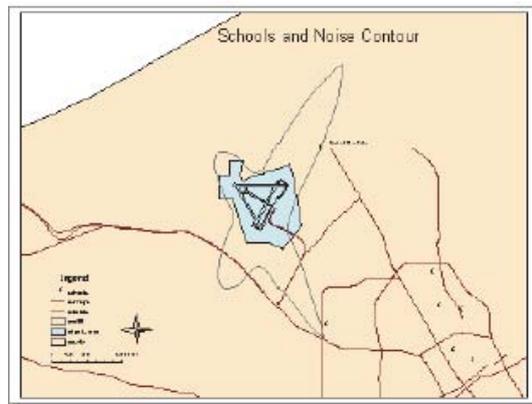
)
 :(
 .Print
 File -
 (x) -
 .Scale Map to fit Printer Paper



.Setup -
 Landscape -
 .OK -



OK



.ArcGIS
)
:(Arc MAP

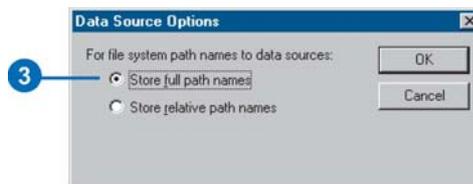
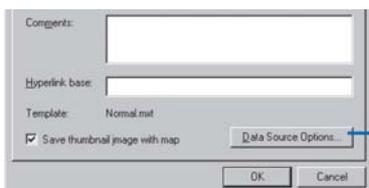
Map Properties

File

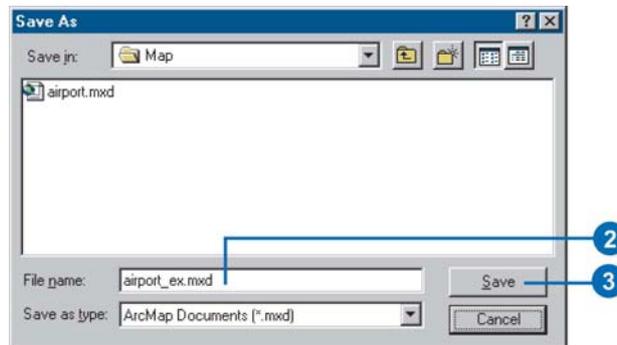
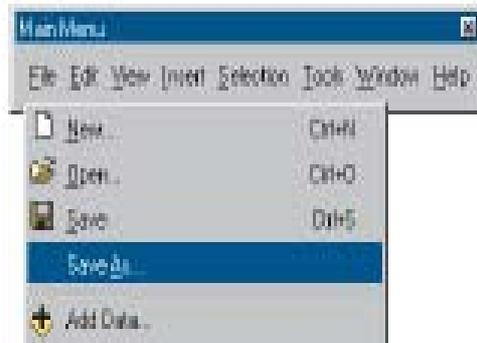
Data Source Options

Store full path names

.OK



- .Save As File -
- airport_ex -
- . Save -

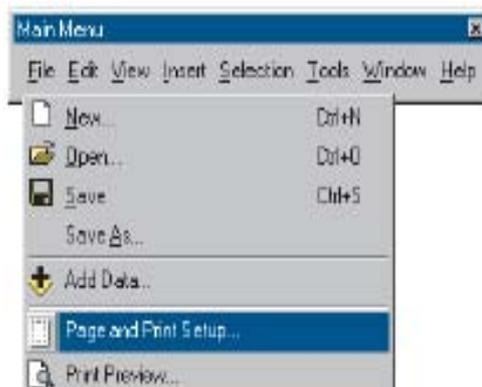
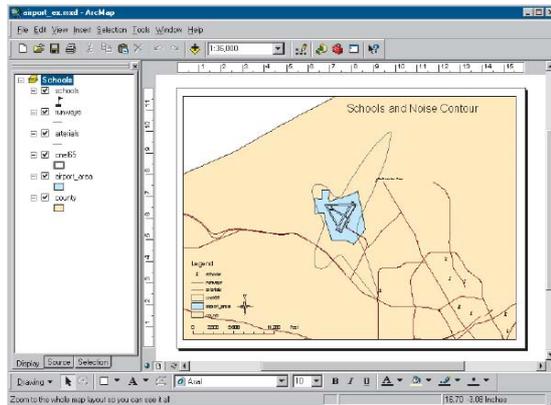


Arc Map

) .
 .(airport_ex

.(View) Layout View
 Page and Print Setup

File



ANSI E

Standard Sizes

E
 Portrait

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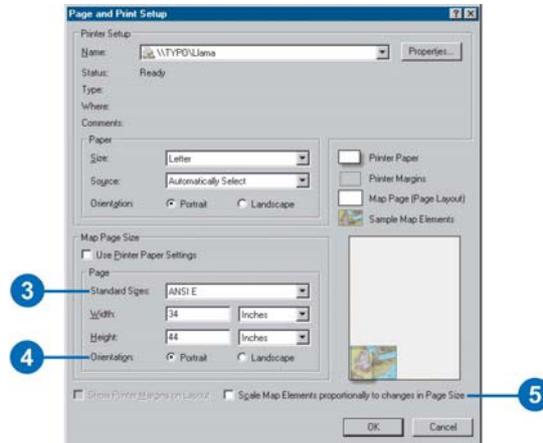
-

-

.

Scale Map Elements

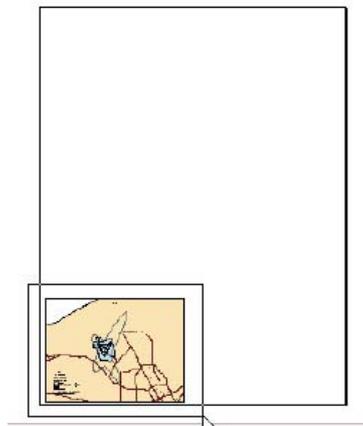
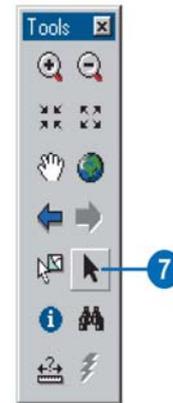
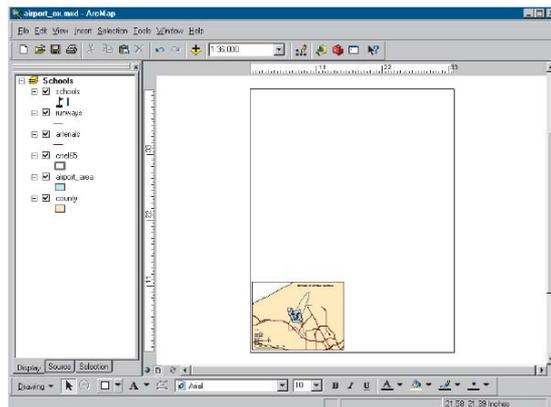
proportionally to changes in Page Size

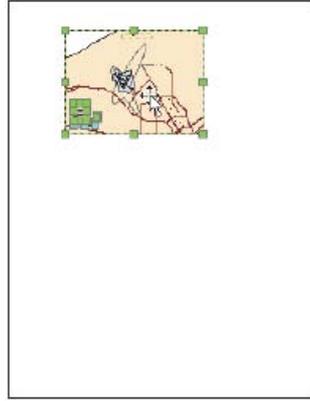


.OK

.Tools

Select Elements





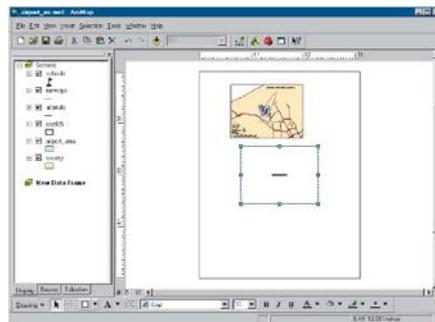
Data Frame

Data Frame

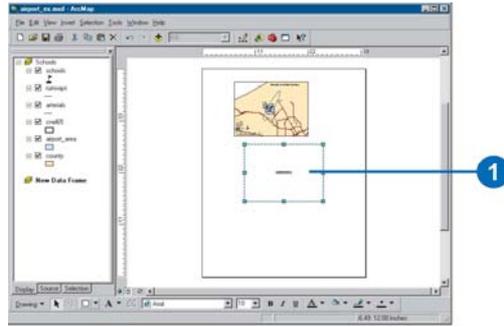
Insert

)

(



Data Layer



Add Data

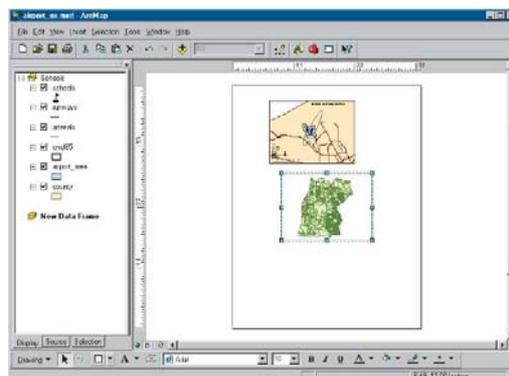
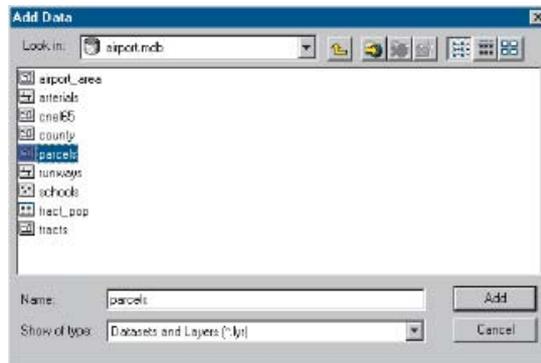


Add Data

.Add

airport.mdb

Parcels



New Data Frame
Properties



Land Use

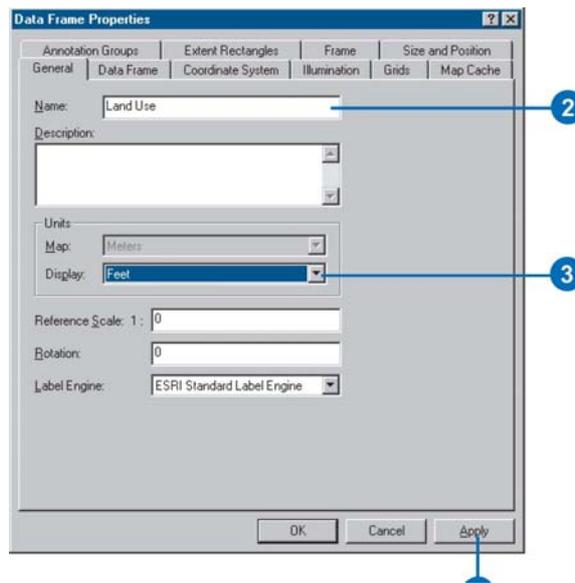
General

(
) Feet
(
Display Units

Display

Apply

Size and Position

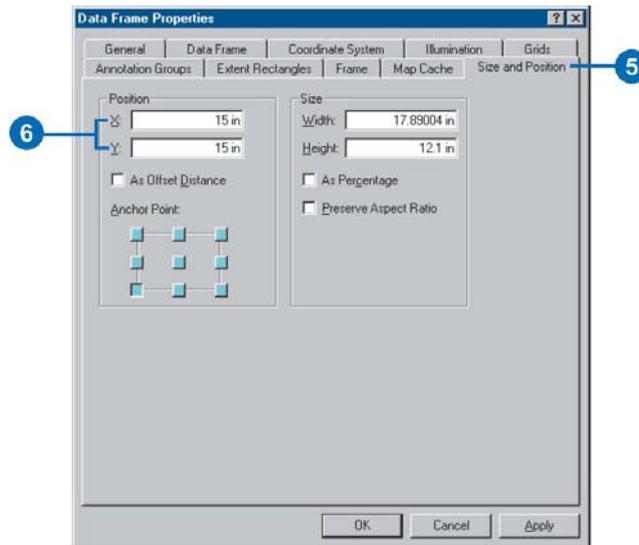


4

Y

X

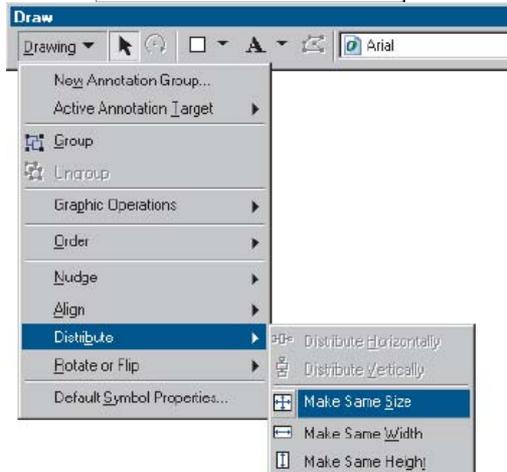
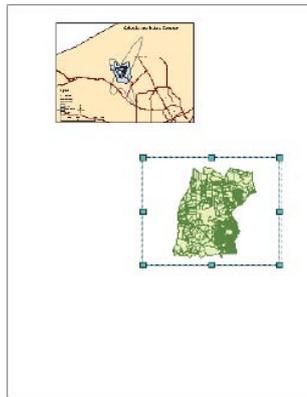
.OK

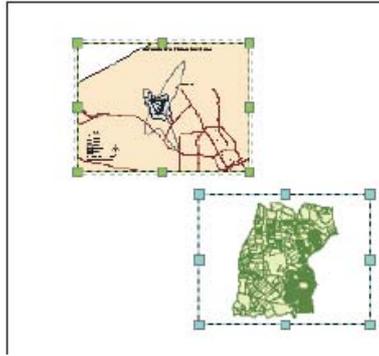


Bold

Distribute

Shift
Drawing
.Same Size



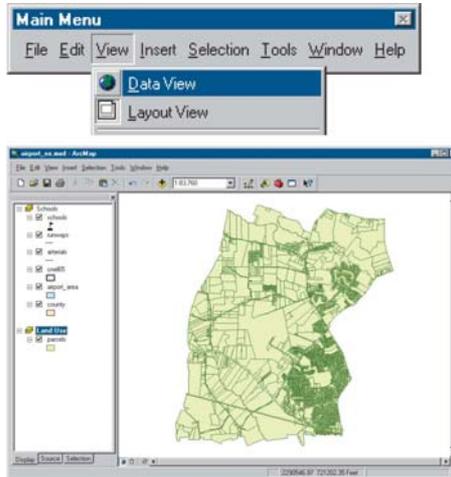


Land

Use

. Data View

View -



airport_area
.Copy

.Paste Layer(s)

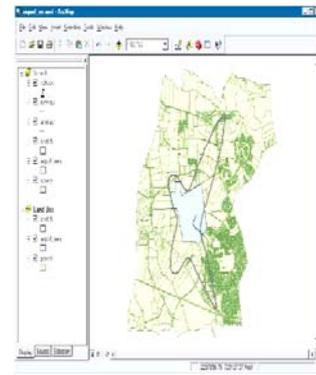
. cnel65



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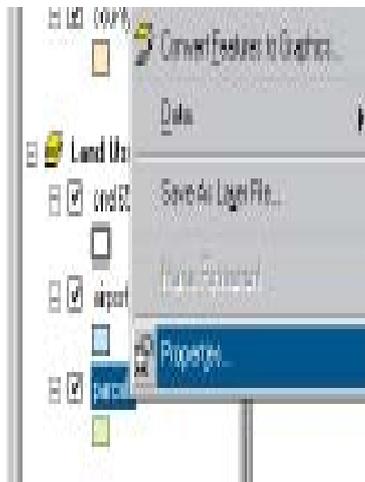


4

Attribute

:

. Properties



(

) Symbology

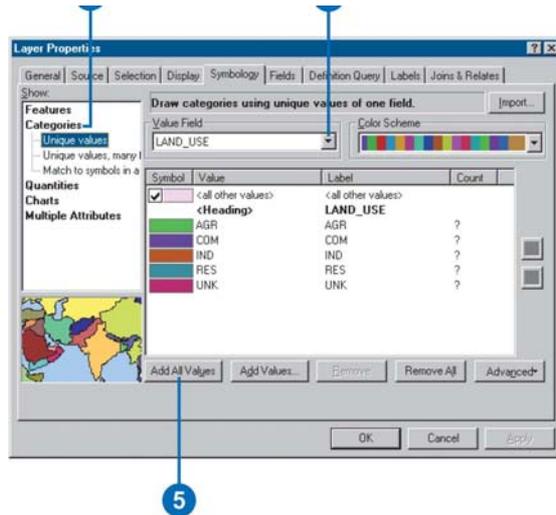
Categories

. Unique Values

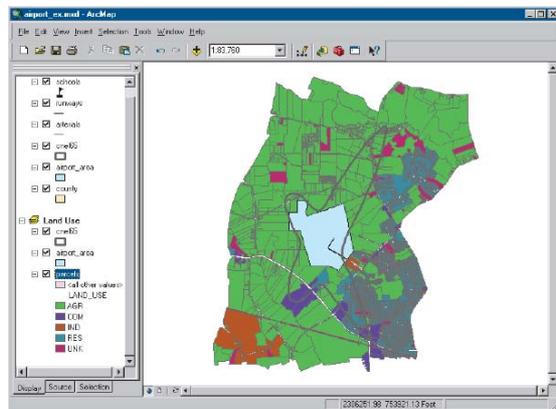
LAND_USE

Value

. Add All Values



. OK



Arc Map

Arc Map

. Properties

. Symbology

Categories

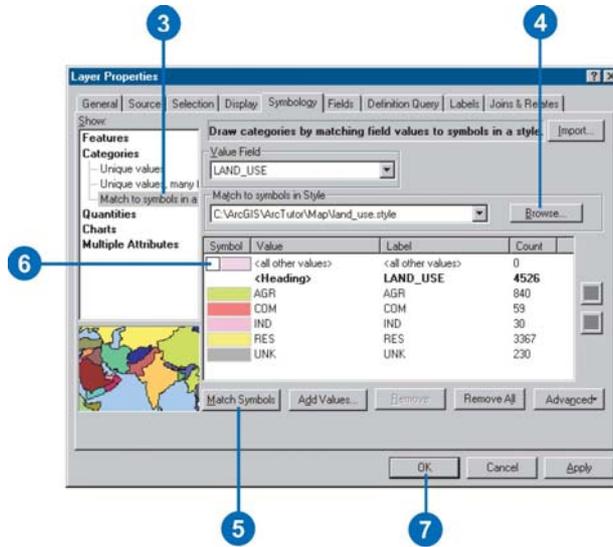
.Style

Match to Symbols in a

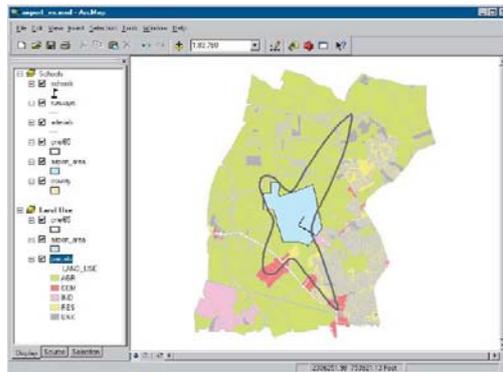
. land_use style

. Match Symbols

All other values



.OK



. Select by Location

Selection



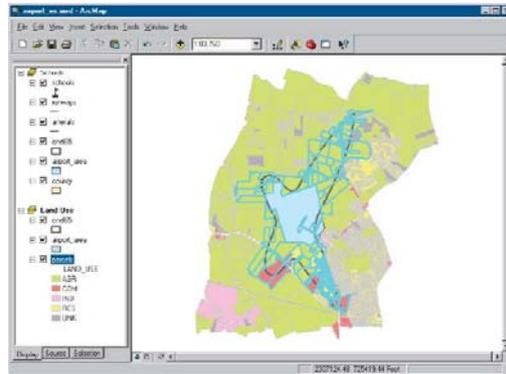
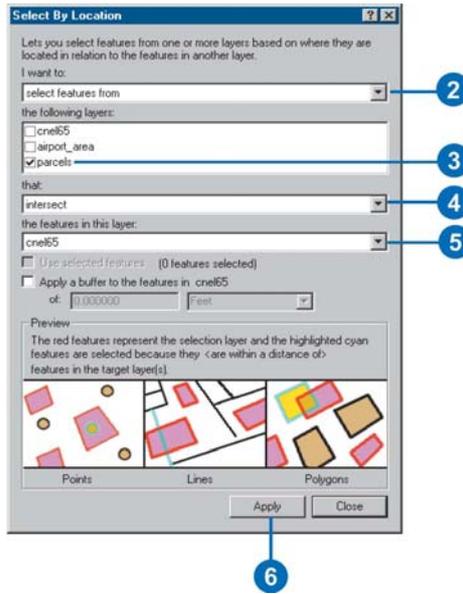
.Select features from

parcels

intersect

.cnel65

. Apply



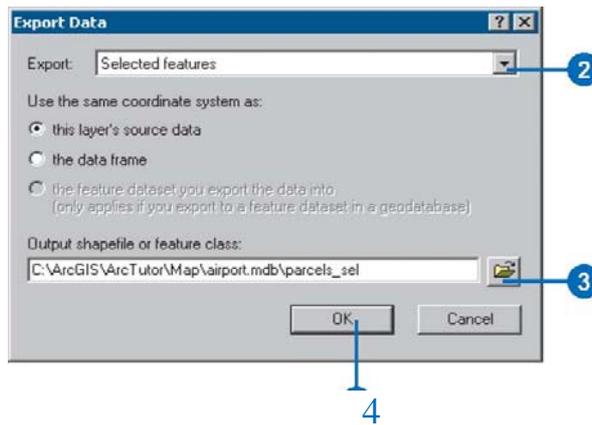
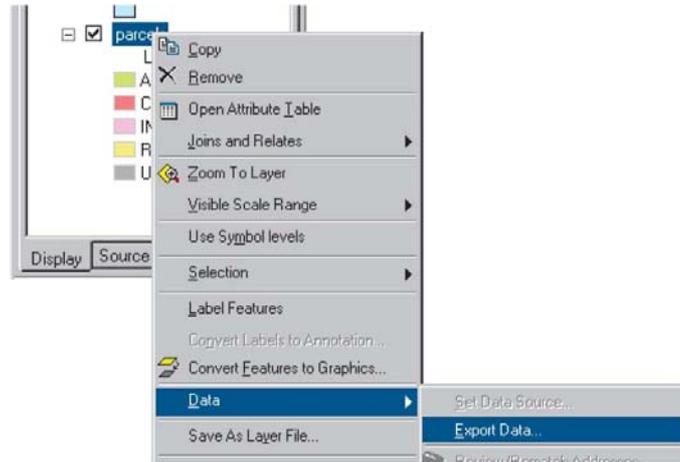
parcels

.Export Data

Data

Selected

) features
(parcel_sel -



Arc Map

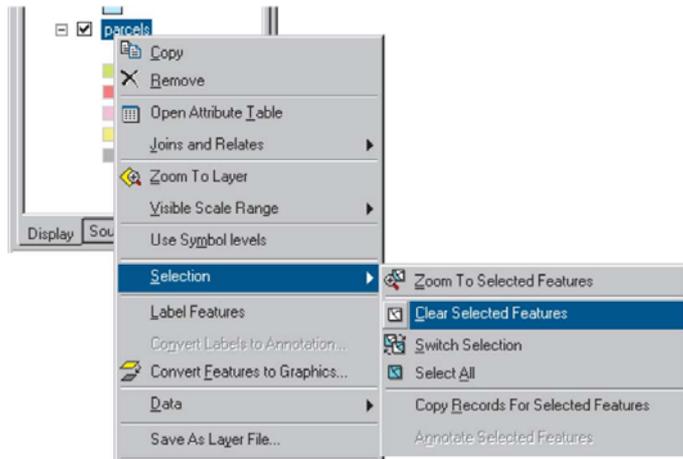
.OK -

Yes -

(parcels -

.Clear selected features

Selection -

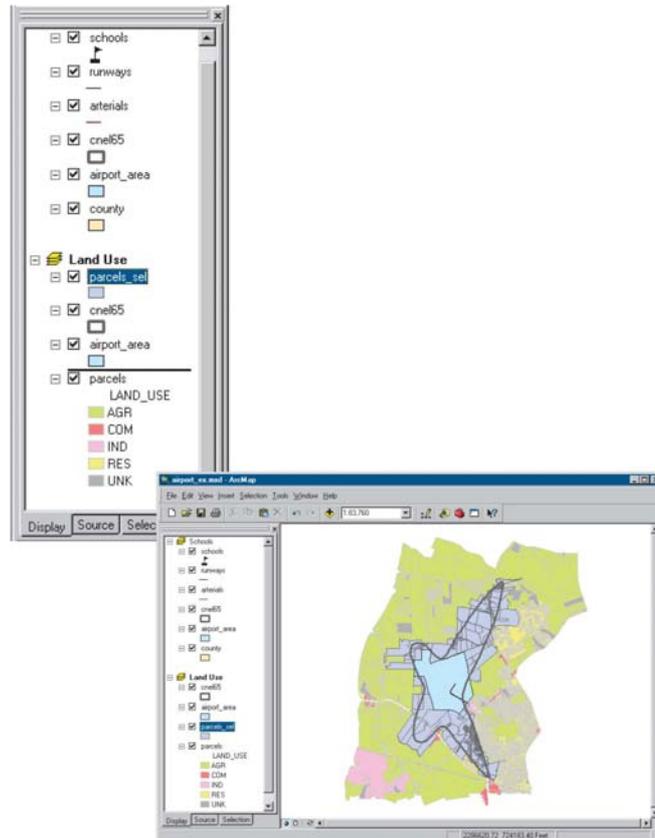


)

parcel_sel

parcels

(



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Arc Map

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parcel_sel

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-

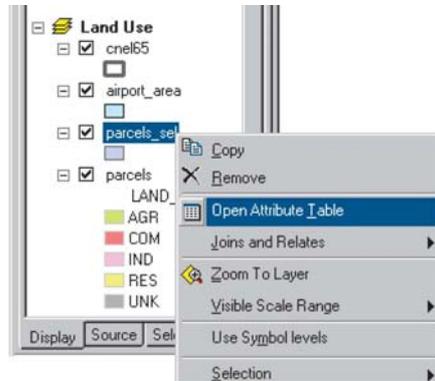
-

.

.Open Attribute Table

LAND_USE

.Summarize



FID*	Shape*	PARCEL_ID	LAND_USE	Shape_Length	Shape_Area
1	Polygon	2750.0020003	AGR		1060738
2	Polygon	2750.0020002	AGR		1156159
3	Polygon	2750.0020001	AGR		319592
4	Polygon	2750.0010007	AGR		497676
5	Polygon	2750.0010001	AGR		909162
6	Polygon	2750.0010006	AGR		348813

. LAND_USE

Sum

. Shape_Area

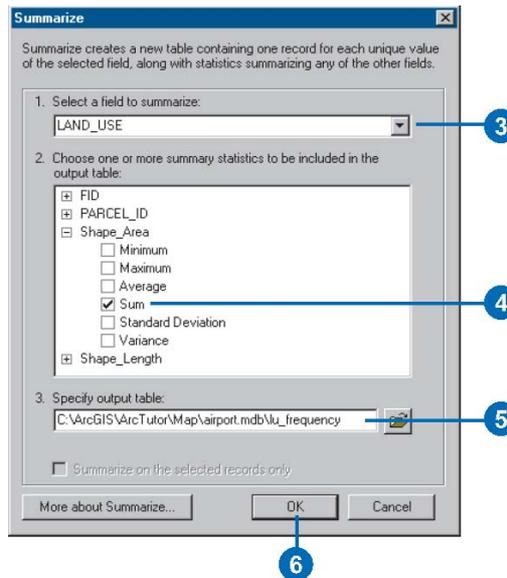
+

lu_frequency

.OK

)

.(
Yes



) Source

Display

.(

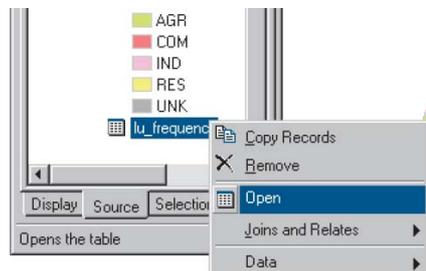
)

.(

:

lu_frequency

.Open



FID*	LAND_USE	Count_LAND_USE	Sum_Shape_Area
1	AGR	141	85240001.453282
2	COM	15	12319720.787529
3	IND	8	32894586.604711
4	RES	257	10426408.594982
5	UNK	40	3130945.053503

Record: 1 | Show: All Selected | Records (0 out of 5 Selected) | Options

Create

Graphs

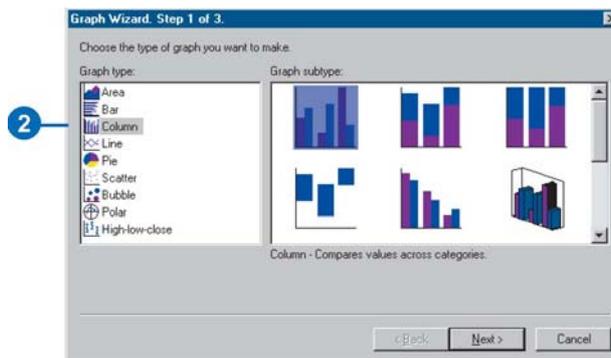
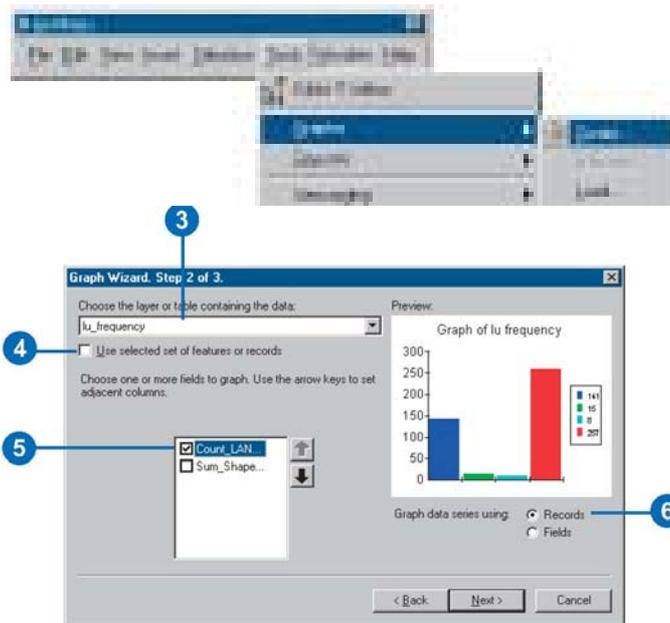
Tools

. Next

Column Graph

lu_frequency

Use selected features or records



Graph data series using records

. Next

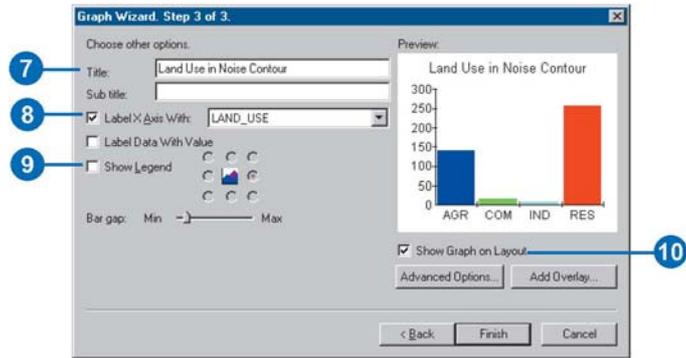
. Land use in noise contour :

.LAND_USE Label X Axis with

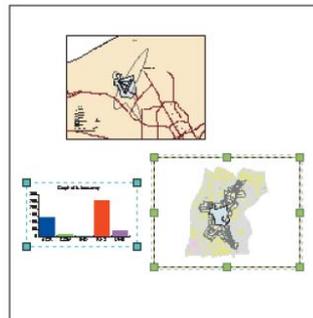
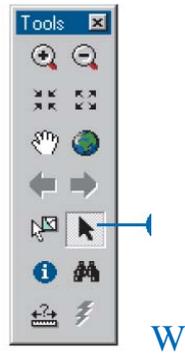
Show Legend

Show graph on layout

.Finish



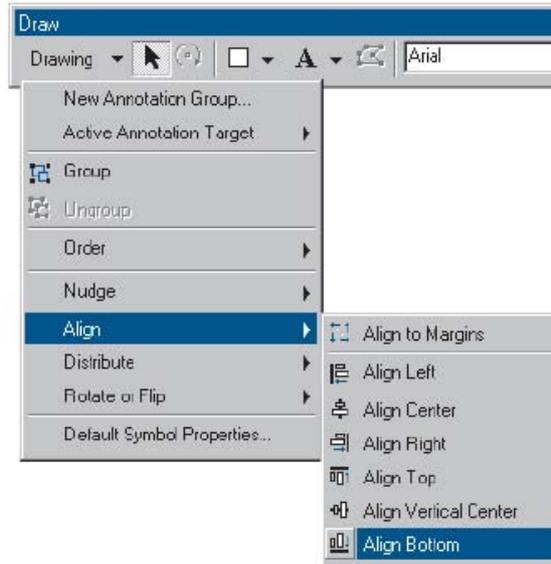
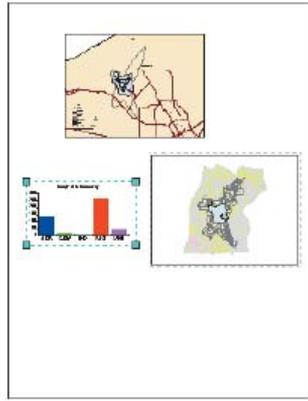
Select Elements



Shift

()
Align

Align Bottom



File

.Save

Arc Map

(View Data Frame) Layout View Insert () Properties

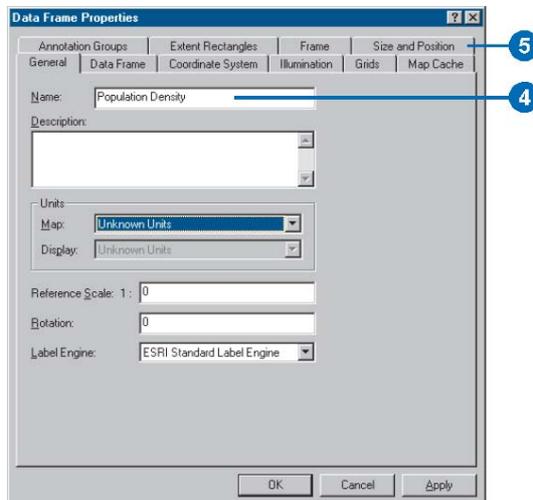


Population Density



General

Size and Position



Y

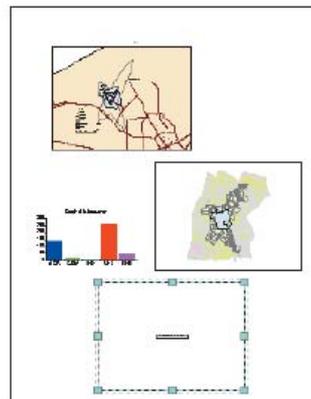
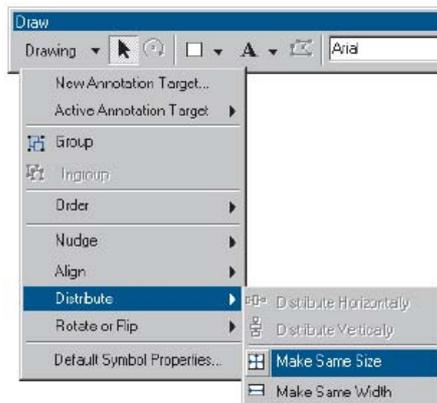
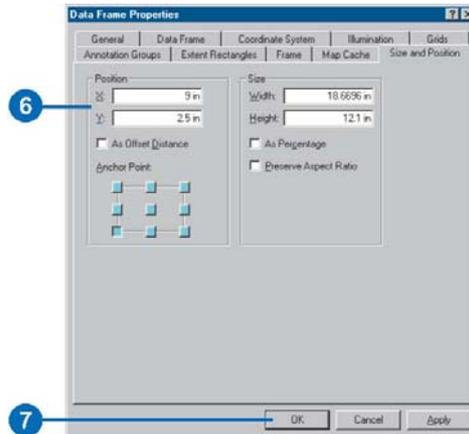
X

OK
Shift

Distribute

Draw

Drawing
Make Same Size



Arc Catalog

: Arc Catalog

Arc Catalog

ArcCatalog



Arc Catalog

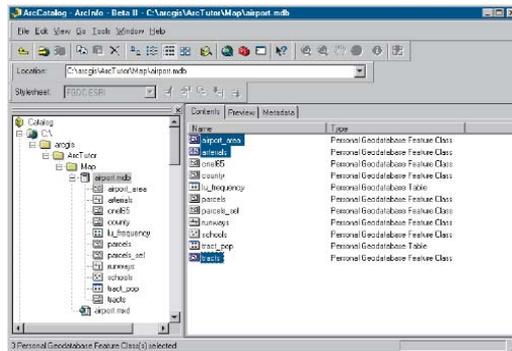
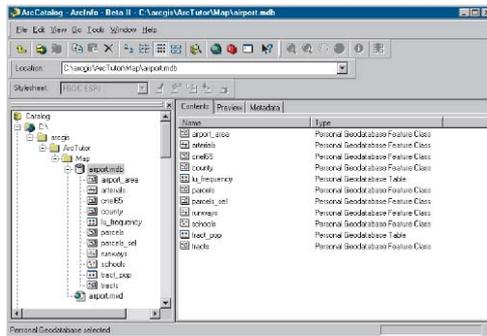
+

arterials

Control

tracts ,

airirport_area



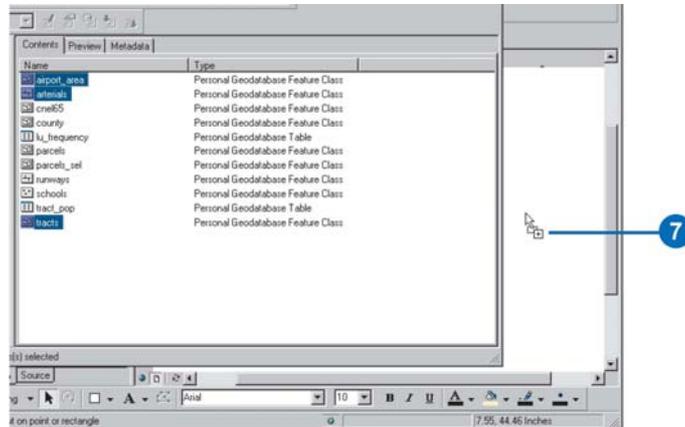
)

Arc Catalog
arterials

Arc Map
arc Map

Arc Catalog

Zoom to Layer



Display

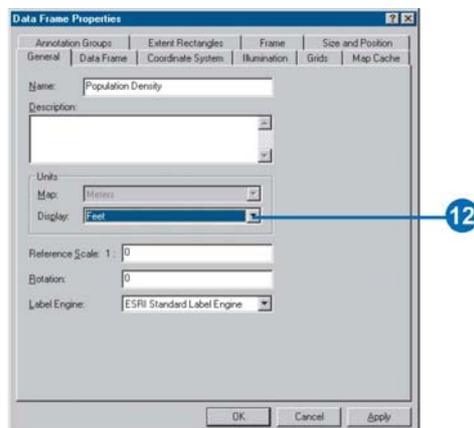
General

Properties

(

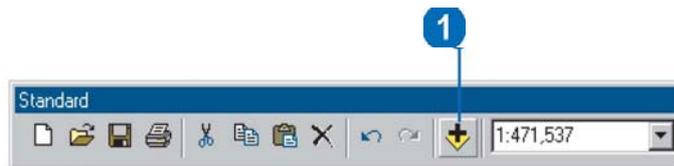
Display Units

OK



Add Data

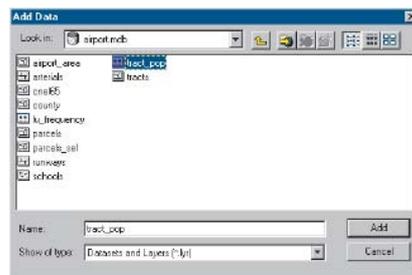
Arc Map



() tract_pop

Add

Source



: ()

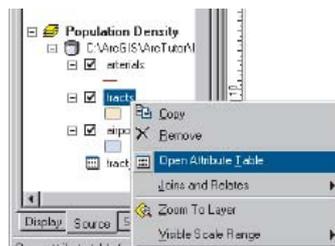
:

ID

Open Attribute

Attributes

Table



FID	Shape	Shape_Length	Shape_Area	TRACT_ID
1	Polygon	23283.0648175032	23581864.0718	100
2	Polygon	20380.8213216289	17588158.4627	200
3	Polygon	19784.5068628824	17038547.9829	300
4	Polygon	71734.89078368	182838877.306	400
5	Polygon	41505.3888513427	101459083.343	500
6	Polygon	61452.8622489481	183391588.187	600
7	Polygon	31262.7438118726	782785476.836	700
8	Polygon	10580.8148028822	17437645.7388	800
9	Polygon	106827.057454315	452403831.025	900

tract_pop

.TRACT_ID

.Open

Rowid*	TRACT_ID	POPULATION
1	100	4231
2	200	1683
3	300	2580
4	400	6012
5	500	7046
6	600	5170
7	700	6203
8	800	2814
9	900	3295

tracts

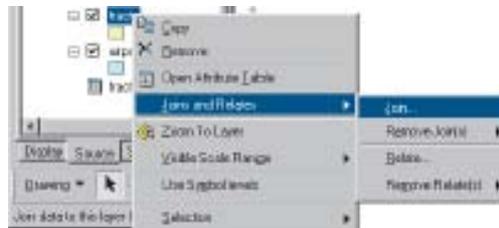
join

Join and Relates

join

attribute from a table

TRACT_ID



tract_pop

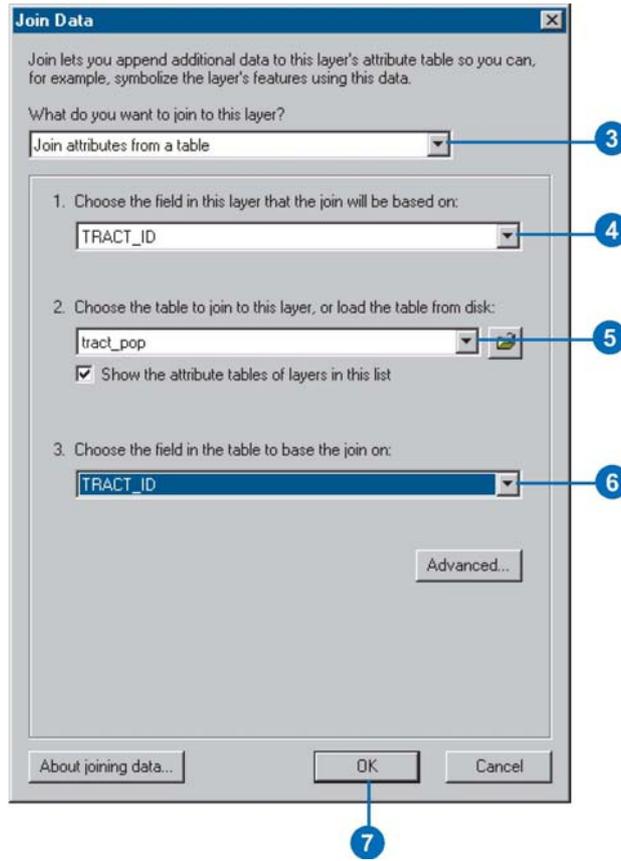
TRACT_ID

create an

OK

YES

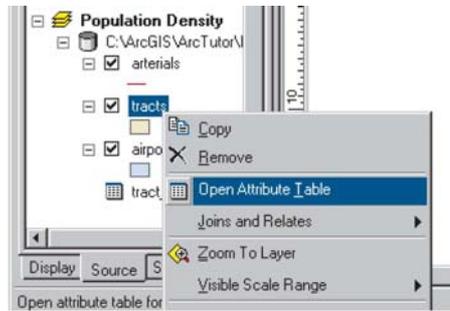
index



Open

tracts

attribute table



FID	Shape	Shape_Length	Shape_Area	tracts.TRACT_ID	Rowid	tract_pop.TRACT_ID	tract_pop.POPULATION
1	Polygon	23359.054618	29901964.07167100	1	100		4221
2	Polygon	20350.621322	17966796.42279200	2	200		1683
3	Polygon	19764.505863	17039547.96297300	3	300		2580
4	Polygon	71734.650764	182638877.3067400	4	400		6012
5	Polygon	41535.388851	101159098.3431500	5	500		7046
6	Polygon	61452.662248	183391558.1877600	6	600		5170
7	Polygon	91262.743612	292795476.8368700	7	700		6203
8	Polygon	18980.414003	17437646.73404801	8	801		2914
9	Polygon	108657.097455	452483831.0557802	9	802		3295
10	Polygon	182284.761421	982326195.0031900	10	900		3059
11	Polygon	124503.439050	510338863.63831000	11	1000		1364
12	Polygon	161714.527902	1171289698.1421100	12	1100		1868
13	Polygon	168383.265964	1277251210.4881200	13	1200		3070
14	Polygon	172305.563710	1271242904.0961300	14	1300		5442
15	Polygon	110685.412067	563971341.48881400	15	1400		2945
16	Polygon	200138.818819	1454467245.0241500	16	1500		3496
17	Polygon	161157.789413	1019499405.5471600	17	1600		2305
18	Polygon	156142.837956	880859065.89381700	18	1700		3378

tracts

options

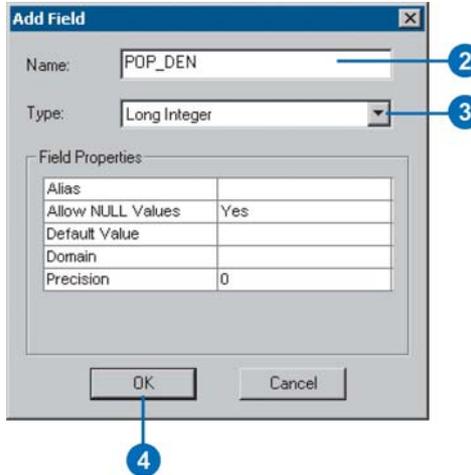
()

add field
Arc Catalog

FID	Shape	Shape_Length	Shape_Area	tracts.TRACT_ID	Rowid	tract_pop.TRACT_ID	tract_pop.POPULATION
1	Polygon	23353.064518	23501854.07181100	1	100		4231
2	Polygon	20350.821322	17906796.472791200	2	200		
3	Polygon	19764.506863	17038547.962971300	3	300		
4	Polygon	71734.650764	182638877.30671400	4	400		
5	Polygon	41535.388851	101159098.3431500	5	500		
6	Polygon	61452.662248	183391558.18771600	6	600		
7	Polygon	91262.743612	292795476.83691700	7	700		
8	Polygon	18980.414003	17437646.734041801	8	801		
9	Polygon	108657.097495	452483831.05571802	9	802		
10	Polygon	182284.761421	982326195.00311900	10	900		
11	Polygon	124503.435050	510338863.63831000	11	1000		
12	Polygon	161714.527502	1171289638.14211000	12	1100		
13	Polygon	168283.265964	1277251210.40011200	13	1200		
14	Polygon	173305.565970	1271243904.09811300	14	1300		
15	Polygon	110695.412067	565971341.48881400	15	1400		
16	Polygon	200138.818819	1454467245.02411500	16	1500		
17	Polygon	161157.789413	1019499405.54711600	17	1600		
18	Polygon	156142.837956	880859065.89381700	18	1700		

POP_DEN : field name
Long Integer

OK



:()

()

Arc Map

Editors



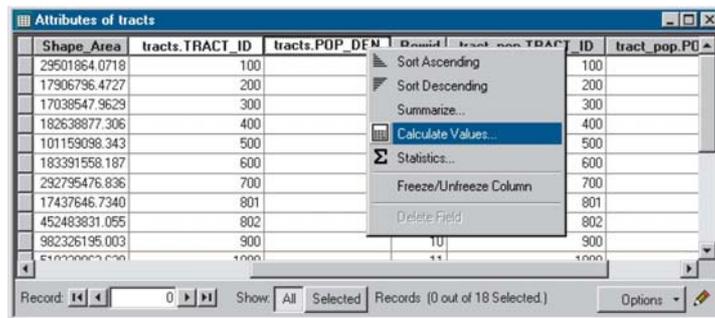
Start Editing

Editor



POP_DEN

Calculate Values

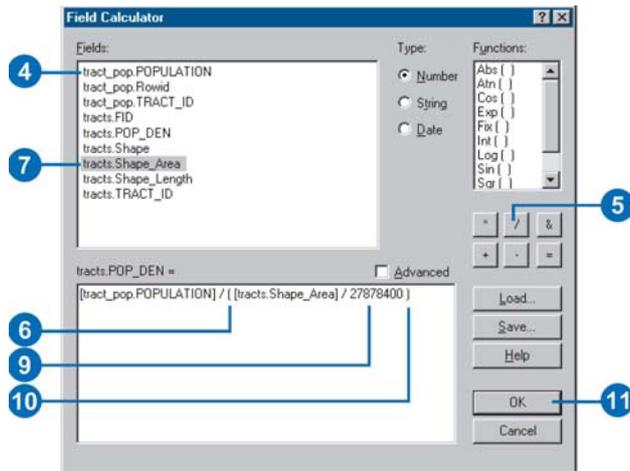


$$\left(\frac{\text{POPULATION}}{\text{AREA}} \right) / \text{POPULATION} = \text{POP_DEN}$$

POPULATION
/

tract.Shape_Area
/

OK



FID	Shape	Shape_Length	Shape_Area	tracts.TRACT_ID	tracts.POP_DEN	tr
1	Polygon	23359.064618	29501884.07187100		3998	1
2	Polygon	20350.821322	17906796.47279200		2620	2
3	Polygon	19784.506863	17038547.96297300		4221	3
4	Polygon	71734.650764	182638977.3057400		918	4
5	Polygon	41535.388851	101159098.3431500		1342	5
6	Polygon	61452.682248	183391558.1877600		786	6
7	Polygon	81262.743612	280786476.8389700		631	7
8	Polygon	18980.414003	17437648.73404801		4859	8
9	Polygon	108657.087495	452463831.0557802		203	9
10	Polygon	182384.761421	882326195.0031900		87	10
11	Polygon	124503.435090	610338863.63831000		75	11
12	Polygon	161714.527502	1171289698.1421100		44	12
13	Polygon	169393.265994	1277251210.4001200		67	13
14	Polygon	173305.569710	1271243904.0961300		119	14
15	Polygon	110685.412067	569971341.48861400		144	15
16	Polygon	200139.918919	1454467245.0241500		67	16
17	Polygon	161157.789413	1013499405.5471600		63	17
18	Polygon	156142.937956	680859065.69361700		107	18

Stop Editing

Editor

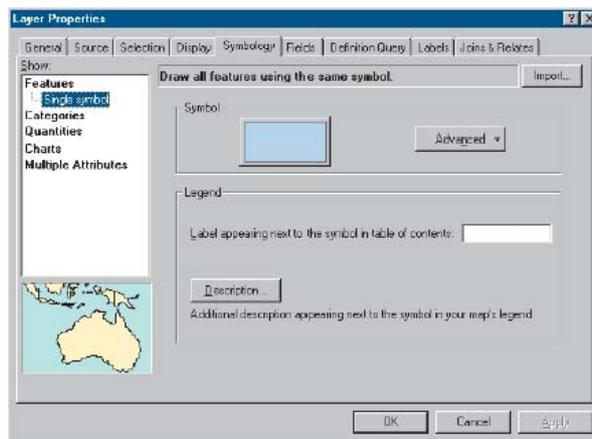


YES

tracts

properties

() Symbology -



Show

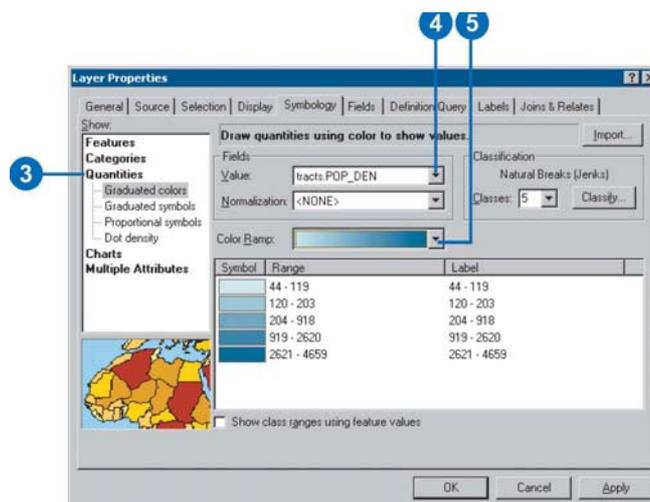
Quantities

Graduated Colors

Values

POP_DEN

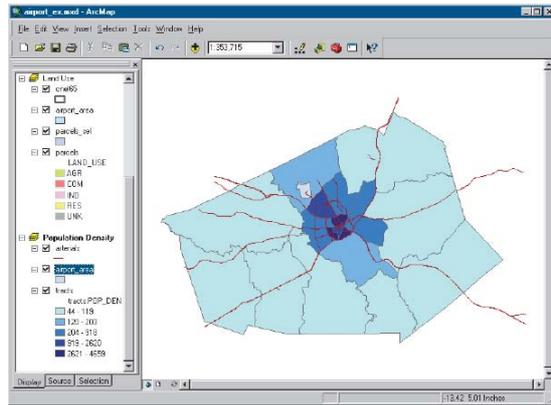
Color Ramp



Arc Map

OK -
Display -
arterials -

) Data View -
(Data View View



File)

.(Save

Arc Map

.()

:

:_

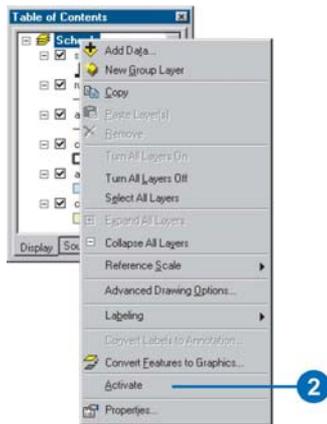
: arterials

View

Data View

Data View

Activate



arterials

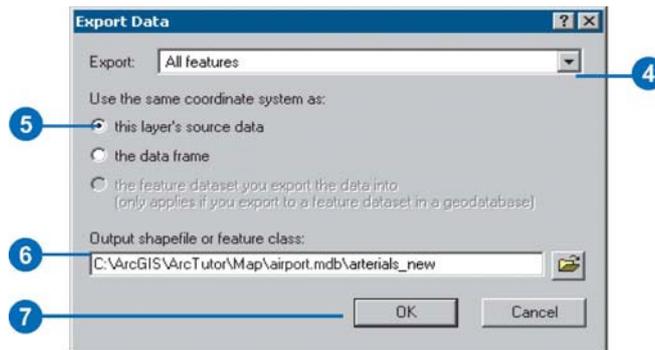
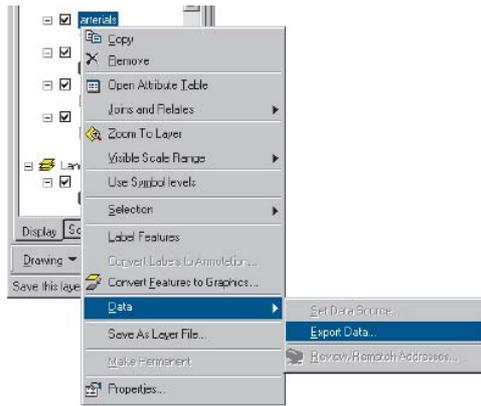
Export Data

All features

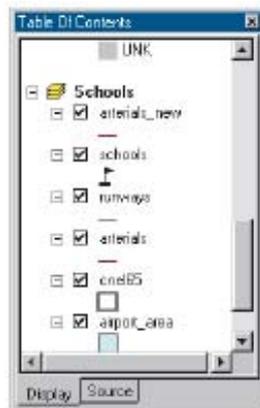
Export

Use the same coordinate system

arterials_new



OK -
Yes -

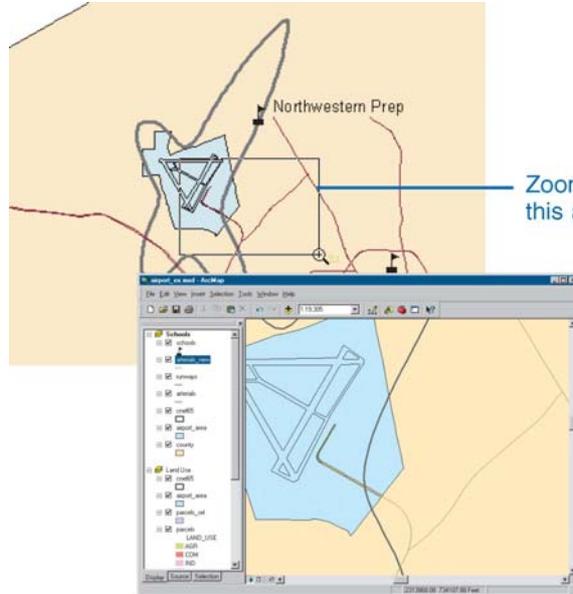


()

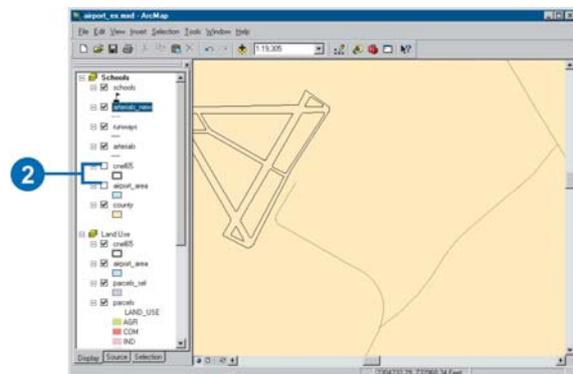
Copy

Zoom In Tools

Zoom in to this area.

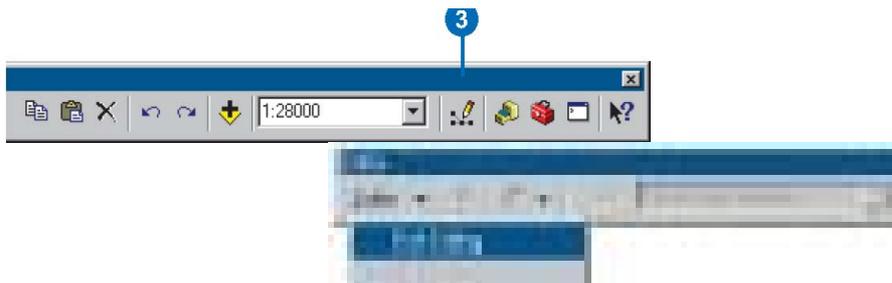


× airport_area cnel65



) Editor

Start Editing



:snapping

Snapping

Editors

-



. arterials_new

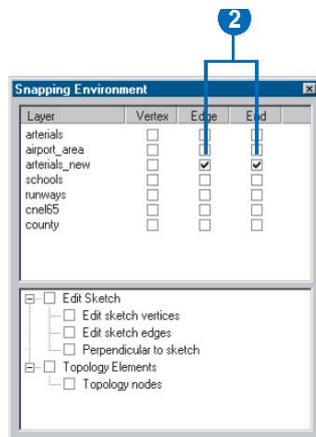
End

Edge

-

()

-



: ()

)

arterials_new

Target

-

(
Sketch

-

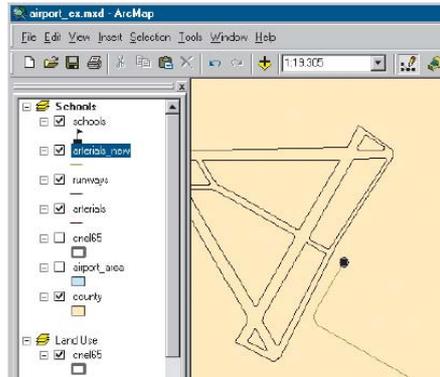
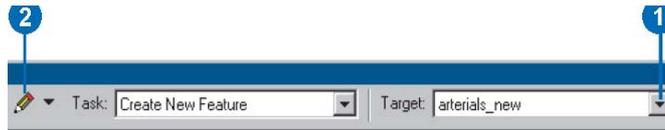
()

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+

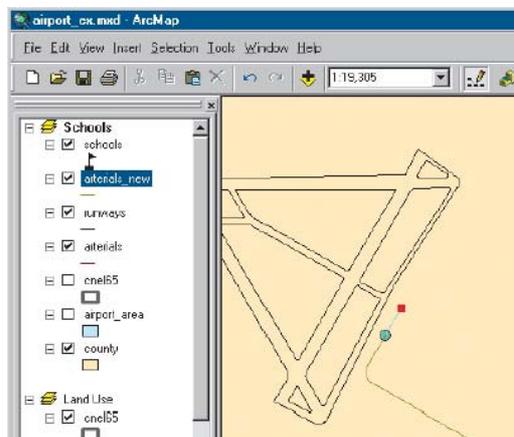
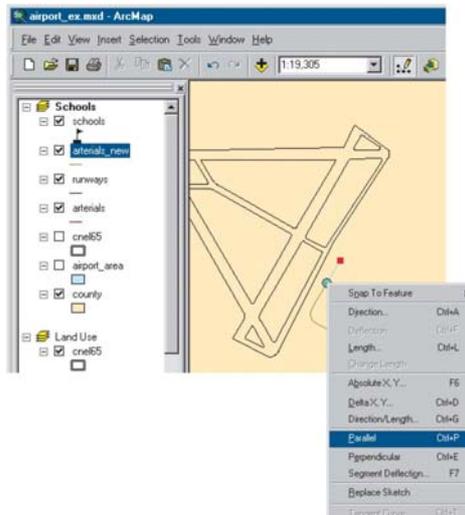
)

-



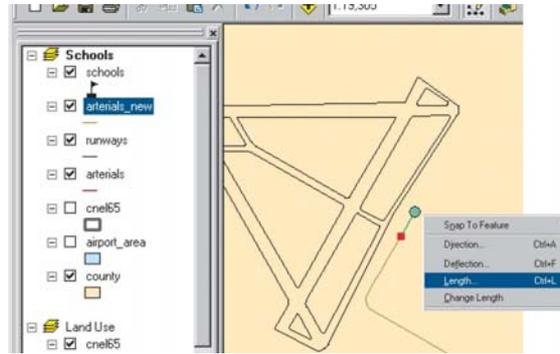
()
()

context
Parallel



()

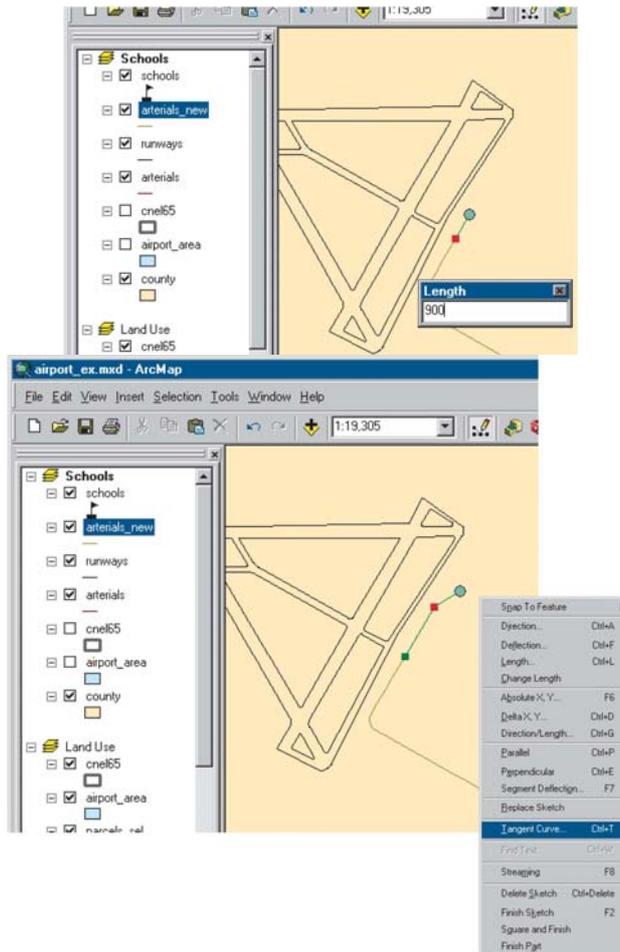
Length



Enter

()

Tangent Curve



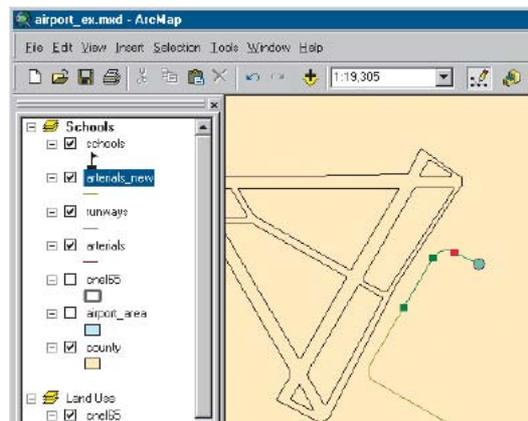
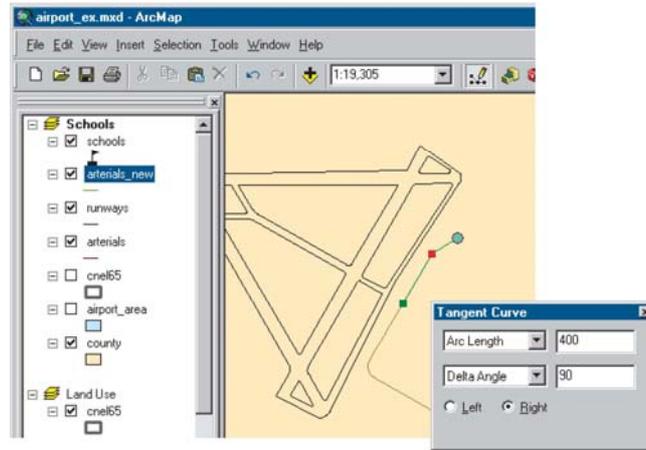
Arc Length

(. (Delta Angle))

Enter

Right

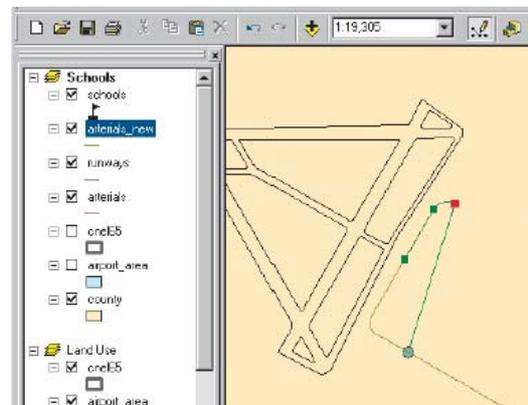
(

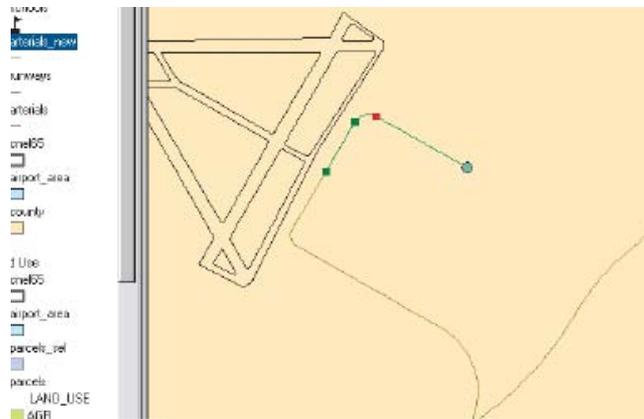
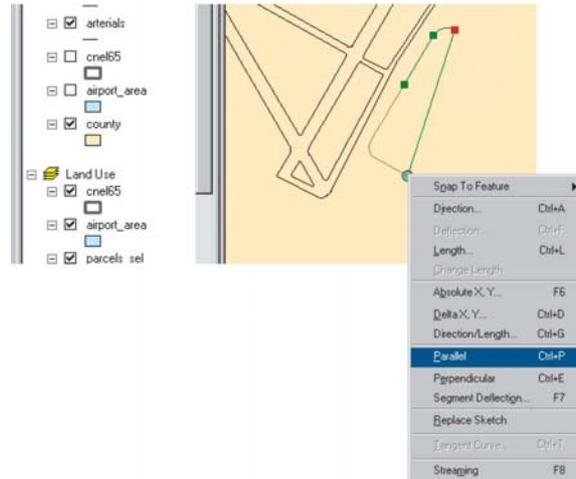


.(

)

Parallel

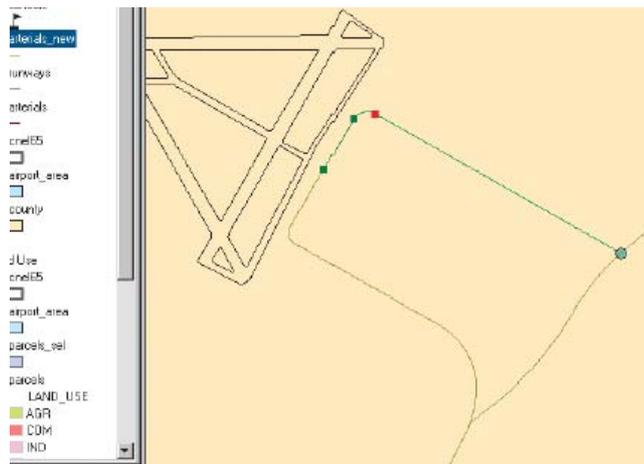




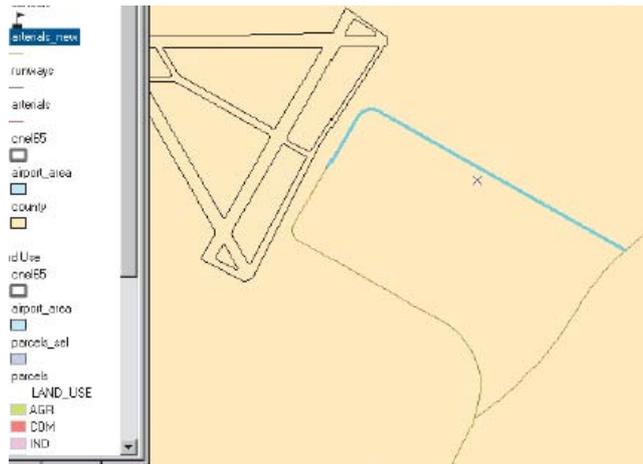
snapping

()

(



()



: (Attribute)

:()

Editor

Attribute



Enter

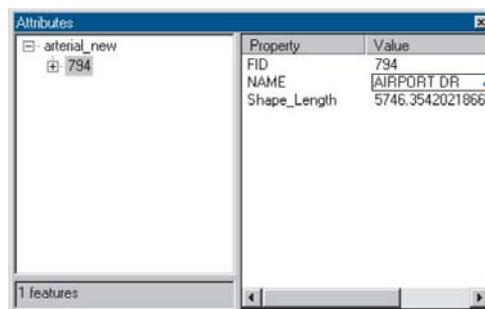
Airport Dr :

Name

Stop Editing

Editor

Yes

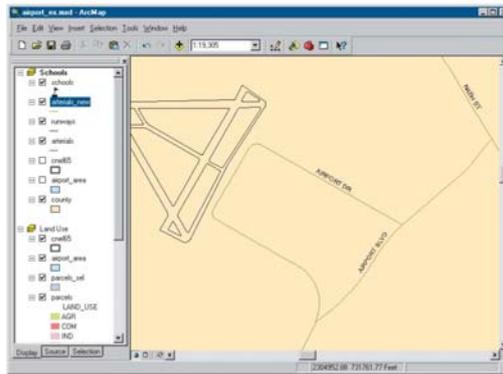
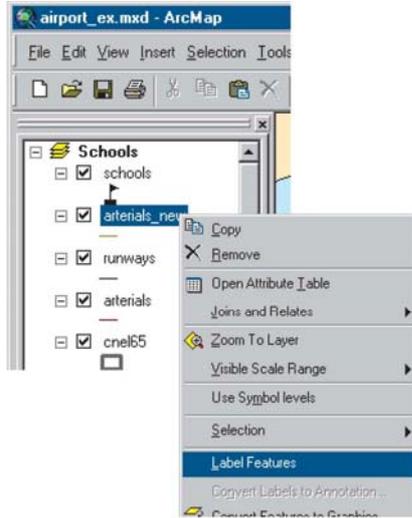


arterials_new

Label Features

×

arterials_new cnel65



View

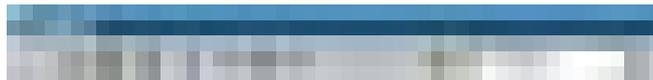
Layout View

Map

Enter

()

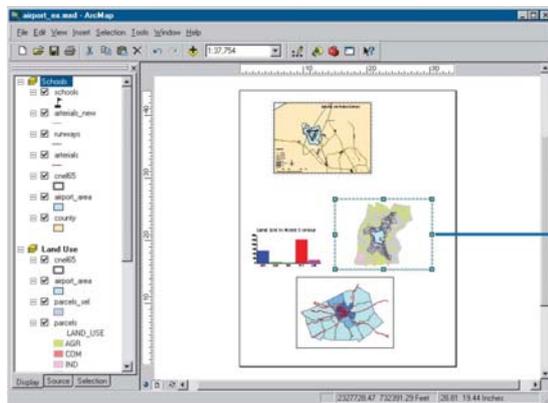
Scale



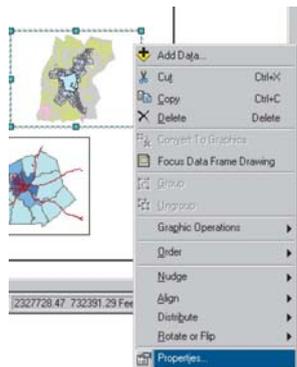
Arc Map

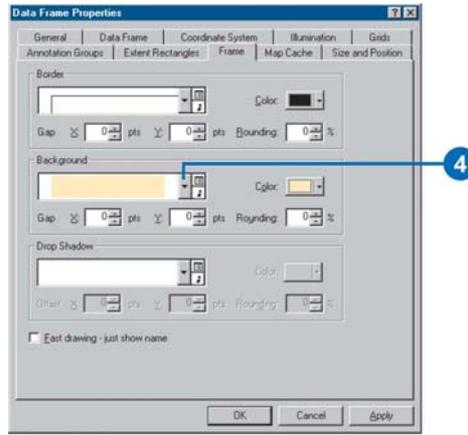
:()
:

) View Layout View -
(
Land Use -
parcel_sel



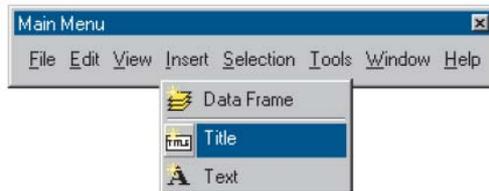
Properties -
Sand Background -
Frame -
OK





Title

Insert

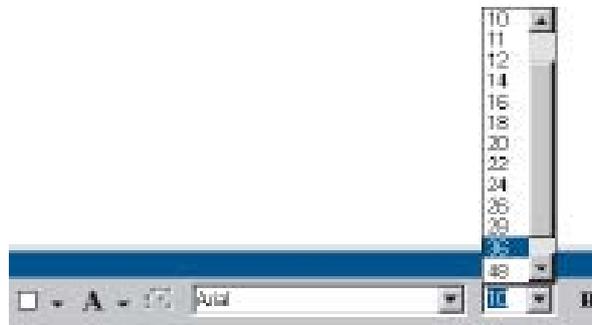
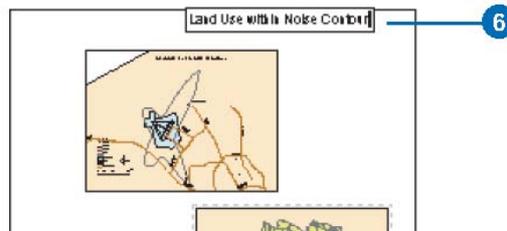


) Land use within noise contour :

Enter (

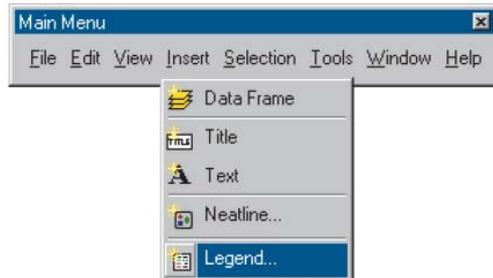
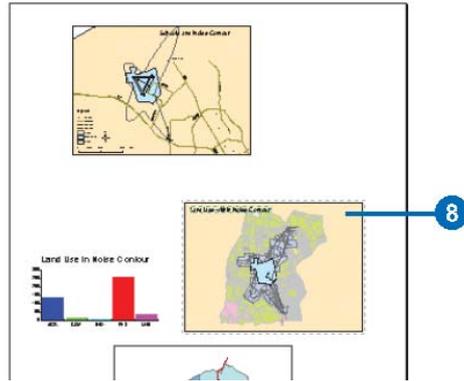
Draw

Text Size



Legend

Insert

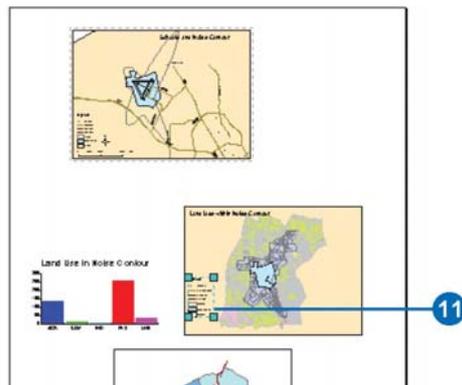


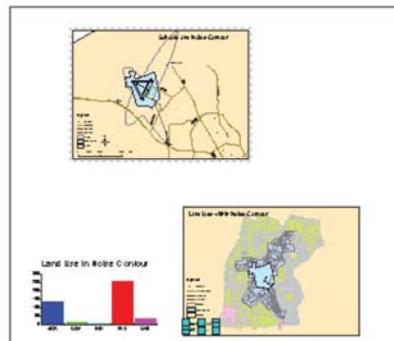
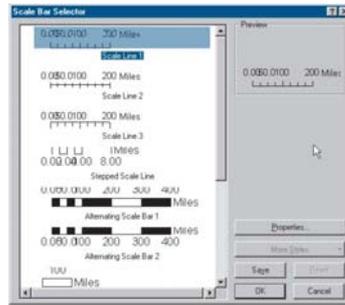
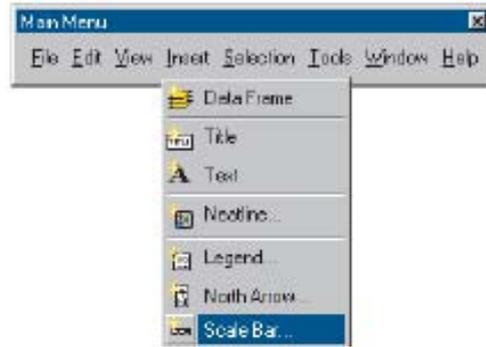
Finish

Next

Scale Bar
OK

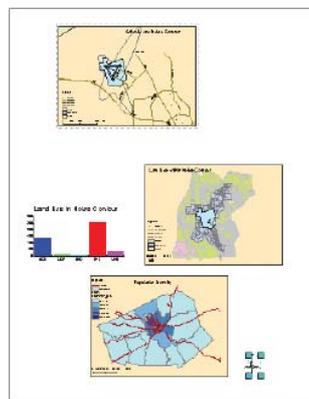
Insert
Scale Line 1





) Population Density

Olive



The

New Text
Proposed Airport Extension :

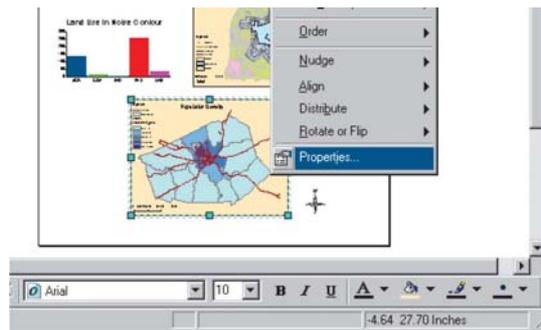
Draw
Top of the Page

Bold



:
Population Density
Properties

Shadow

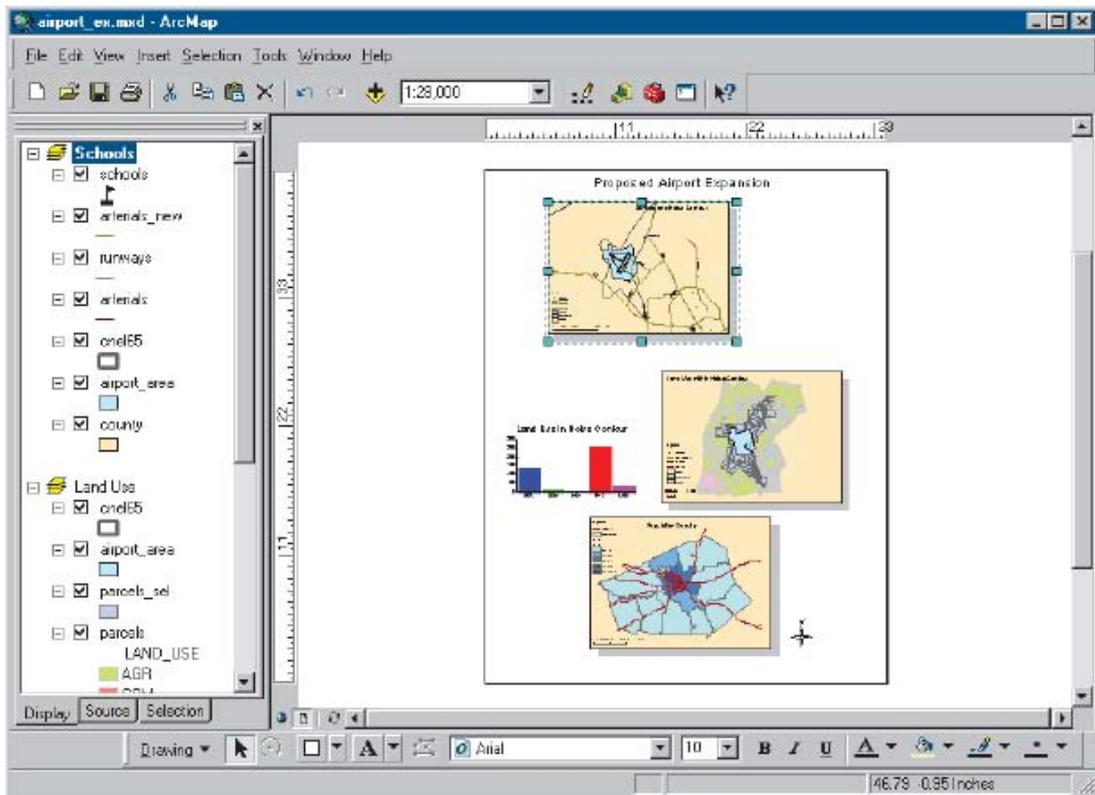
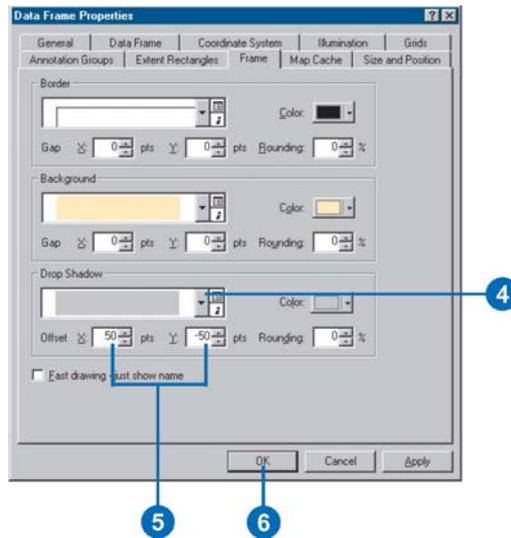


Gray 30% %
Y Offset

Shadow
X Offset

Frame

OK

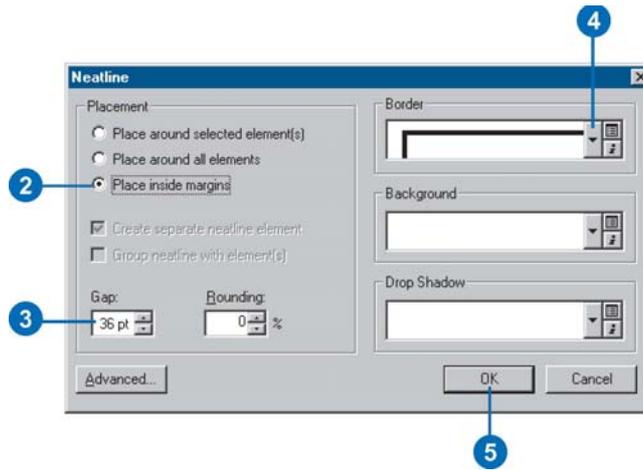
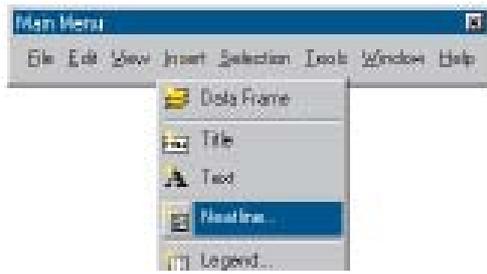


: Neatline

Neatline
Place inside margins

Insert

. gape

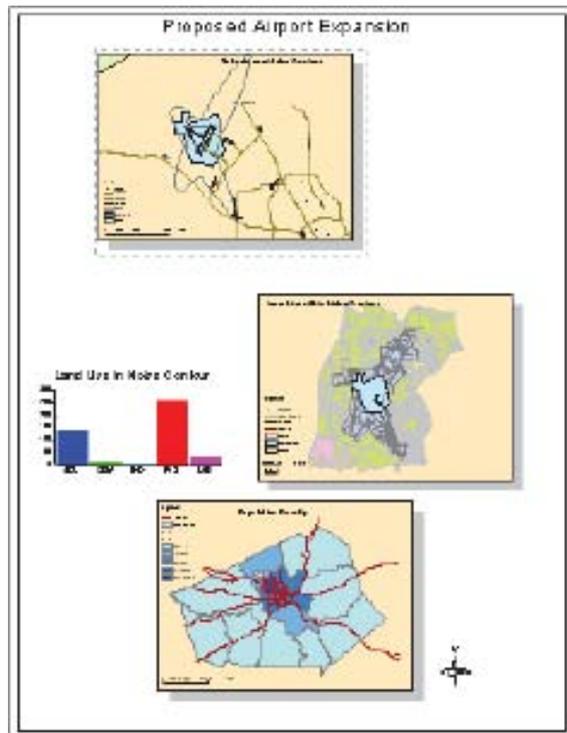


Border Size

Borders

:

OK

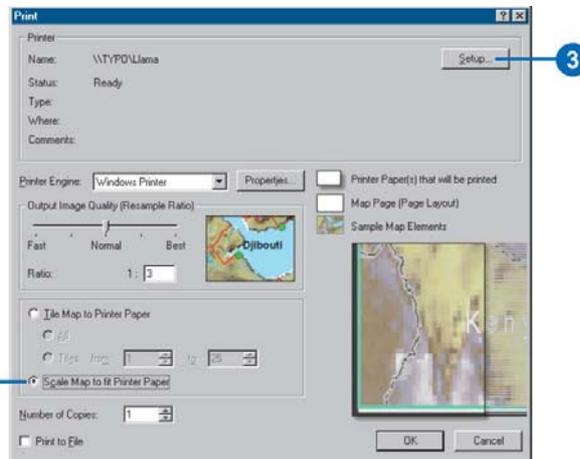


Scale map to fit the printer paper

Print

File

setup



OK

Portrait

OK

