

APPENDIX E – Site Suitability GIS Data Coverages

The following describe the derived data coverages used in selecting suitable locations.

Data Coverage	Source	Description
	Raleigh Transportation Dept.	Public bus routes – 10/2006
	Raleigh Parks and Recreation	Senior club meeting locations – 10/2006
	Wake County GIS Mapping Files	Street Centerline
	Wake County GIS Mapping Files	Wake County Tax Parcels
	Wake County GIS Mapping Files	Raleigh City Limit Boundary
	Wake County GIS Mapping Files	Wake County Schools
	Wake County GIS Mapping Files	Wake County Fire Stations
	Wake County GIS Mapping Files	Wake County EMS Stations
	Wake County GIS Mapping Files	City of Police Stations
	Wake County GIS Mapping Files	Major Roads
	Wake County GIS Mapping Files	Zip Code Boundaries
	Wake County GIS Mapping Files	Open Space - parks, greenways
	Wake County GIS Mapping Files	Libraries
	Wake County GIS Mapping Files	Census Block Groups - 2003
	Wake County GIS Mapping Files	Hydrology

Derived Data Coverages

Data Coverage	Source	Description
	Raleigh Transportation Department	Proximity to public Transportation buffer Less than 100 feet from site = 1 Less than 300 feet from site = 2 Less than 1000 feet from site = 3
	Raleigh Parks and Recreation	Senior club buffers (1 mile radius)
	Wake County GIS Mapping Files	Proximity to Parks, Greenways buffer Adjacent to site = 1 Less than ½ mile from site = 2 Greater than ½ mile from site = 3
	Raleigh Parks and Recreation	Senior Population – Census 2003
	Raleigh Parks and Recreation	Senior Population – Tactician 2006
	Raleigh Parks and Recreation	Senior Population – Tactician 2011
	Raleigh Parks and Recreation	Extended Thoroughfare

Site Suitability Models

Site Model	Source	Description
Proximity to Public Transportation	Taylor Wiseman Taylor	Selects sites based on its proximity to public transportation and major thoroughfares. Less than 100 feet from site = 1 Less than 300 feet from site = 2 Less than 1000 feet from site = 3
Proximity to Parks	Taylor Wiseman Taylor	Selects sites based on its proximity to Parks, Greenways, and Open Space. Adjacent to site = 1 Less than ½ mile from site = 2 Greater than ½ mile from site = 3
Population Distribution Model	Taylor Wiseman Taylor	Identifies distribution of senior populations relative to its proximity to selected sites within a 20-mile radius.
Population Growth Model	Taylor Wiseman Taylor	Senior Population growth from 2006–2011

Methods

Key factors in identifying potential parcels included senior population density, City owned vacant land tax-value, proximity to parks and open space and proximity to both public transportation and major roads. Before the analysis could be performed, several preprocessing steps were completed. To determine potential sites with close proximity to existing parks and open space's, buffer's representing a half mile or greater, a half mile or less, and adjacent to parks were placed on the Potential Sites layer. A model was created to identify tax parcels that touched these buffers along with adding a field (Parks) to the ArcGIS table named parcel and classifying each parcel record as to its proximity to parks and open space. Different criteria were involved in each of the classifications. Adjacent sites were classified as One (1), sites less than a half mile in proximity were classified as two (2), and sites greater than a half mile were classified as three (3).

To determine potential sites with close proximity to public transportation, buffer's representing 1,000 feet or greater, 300 feet or greater, and adjacent to parks were placed on the ProxPubTran layer. A model was created to identify tax parcels that touched these buffers along with adding a field (PubTran9) to the ArcGIS table named parcel and classifying each parcel record as to its proximity to the public transportation system. Different criteria were involved in each of the classifications. Adjacent sites were classified as One (1), sites 300 feet or greater in proximity were classified as two (2), and sites representing 1,000 feet or greater were classified as three (3).

To determine potential sites with close proximity to major roads, buffer's representing 1,000 feet or greater, 300 feet or greater, and adjacent to parks were placed on the Major_Roads_Clip layer. A model was created to identify tax parcels that touched these buffers along with adding a field (RoadTran4) to the ArcGIS table named parcel and classifying each parcel record as to its proximity to major roads. Different criteria were involved in each of the classifications. Adjacent sites were classified as One (1), sites 300 feet or greater in proximity were classified as two (2), and sites representing 1,000 feet or greater were classified as three (3).

Census block groups were used to identify senior population groups. Population size was determined based on senior population density and senior total population for ages fifty-five plus and sixty-five plus.

Spatial Model to determine proximity to Parks

Variables

✚ Parcels		
<i>Data</i>	<i>Type:</i> Feature	Layer
<i>Value:</i> parcel_samp		
✚ Field Name		
<i>Data</i>		<i>Type:</i> String
<i>Value:</i> Parks		
✚ parcel_samp		
<i>Data</i>	<i>Type:</i> Table	View
<i>Value:</i> parcel_samp		
✚ new_os_samp (2)		
<i>Data</i>	<i>Type:</i> Table	View
<i>Value:</i> new_os_samp		
✚ Change the Variable		
<i>Data</i>	<i>Type:</i> SQL	Expression
<i>Value:</i> "TYPE" = 'PARK'		
✚ Parks		
<i>Data</i>	<i>Type:</i> Table	View
<i>Value:</i> new_os_samp		
✚ Parcels_Half		
<i>Data</i>	<i>Type:</i> Feature	Layer
<i>Value:</i> parcel_samp		
✚ parcel_samp (4)		
<i>Data</i>	<i>Type:</i> Table	View
<i>Value:</i> parcel_samp		
✚ Parcels_Quarter		
<i>Data</i>	<i>Type:</i> Feature	Layer
<i>Value:</i> parcel_samp		
✚ parcel_samp (3)		
<i>Data</i>	<i>Type:</i> Table	View
<i>Value:</i> parcel_samp		
✚ Parcels_Adjacent		
<i>Data</i>	<i>Type:</i> Feature	Layer
<i>Value:</i> parcel_samp		
✚ parcel_samp (2)		
<i>Data</i>	<i>Type:</i> Table	View
<i>Value:</i> parcel_samp		

Processes

Add Field

Tool Name: Add Field
Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Fields\AddField

Parameters:

Name	Direction	Type	Data Type	Value
Input Table	Input	Required	Table View	parcel_samp
Field Name	Input	Required	String	Parks
Field Type	Input	Required	String	LONG
Field Precision	Input	Optional	Long	
Field Scale	Input	Optional	Long	
Field Length	Input	Optional	Long	
Field Alias	Input	Optional	String	
Field IsNullable	Input	Optional	Boolean	false
Field IsRequired	Input	Optional	Boolean	false
Field Domain	Input	Optional	String	
Output Feature Class	Output	Derived	Table View	parcel_samp

Messages:

Select Layer By Attribute

Tool Name: Select Layer By Attribute
Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Layers and Table Views\SelectLayerByAttribute

Parameters:

Name	Direction	Type	Data Type	Value
Layer Name or Table View	Input	Required	Table View	new_os_samp
Selection type	Input	Optional	String	NEW_SELECTION
Expression	Input	Optional	SQL Expression	"TYPE" = 'PARK'
Output Layer Name	Output	Derived	Table View	new_os_samp

Messages:

Select Layer By Location (3)

Tool Name: Select Layer By Location
Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Layers and Table Views\SelectLayerByLocation

Parameters:

Name	Direction	Type	Data Type	Value
Input Layer	Input	Required	Feature Layer	parcel_samp
Overlap Type	Input	Optional	String	WITHIN_A_DISTANCE
Select Layer	Input	Optional	Feature Layer	new_os_samp
Search Distance	Input	Optional	Linear unit	0.5 Miles
Selection type	Input	Optional	String	NEW_SELECTION
Output Layer Name	Output	Derived	Feature Layer	parcel_samp

✚Messages:

✚Calculate Field (3)

Tool *Name:* Calculate Field
Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Fields\CalculateField

✚Parameters:

<i>Name</i>	<i>Direction</i>	<i>Type</i>	<i>Data Type</i>	<i>Value</i>
Input Table	Input	Required	Table View	parcel_samp
Field Name	Input	Required	Field	Parks
Expression	Input	Required	SQL Expression	3
Output Feature Class	Output	Derived	Table View	parcel_samp

✚Messages:

✚Select Layer By Location (2)

Tool *Name:* Select Layer By Location
Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Layers and Table Views\SelectLayerByLocation

✚Parameters:

<i>Name</i>	<i>Direction</i>	<i>Type</i>	<i>Data Type</i>	<i>Value</i>
Input Layer	Input	Required	Feature Layer	parcel_samp
Overlap Type	Input	Optional	String	WITHIN_A_DISTANCE
Select Layer	Input	Optional	Feature Layer	new_os_samp
Search Distance	Input	Optional	Linear unit	0.25 Miles
Selection type	Input	Optional	String	NEW_SELECTION
Output Layer Name	Output	Derived	Feature Layer	parcel_samp

✚Messages:

✚Calculate Field (2)

Tool *Name:* Calculate Field
Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Fields\CalculateField

✚Parameters:

<i>Name</i>	<i>Direction</i>	<i>Type</i>	<i>Data Type</i>	<i>Value</i>
Input Table	Input	Required	Table View	parcel_samp
Field Name	Input	Required	Field	Parks
Expression	Input	Required	SQL Expression	2
Output Feature Class	Output	Derived	Table View	parcel_samp

✚Messages:

✚Select Layer By Location

Tool *Name:* Select Layer By Location
Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Layers and Table Views\SelectLayerByLocation

✚Parameters:

<i>Name</i>	<i>Direction</i>	<i>Type</i>	<i>Data Type</i>	<i>Value</i>
Input Layer	Input	Required	Feature Layer	parcel_samp

Overlap Type	Input	Optional	String	BOUNDARY_TOUCHES
Select Layer	Input	Optional	Feature Layer	new_os_samp
Search Distance	Input	Optional	Linear unit	
Selection type	Input	Optional	String	NEW_SELECTION
Output Layer Name	Output	Derived	Feature Layer	parcel_samp

⚡Messages:

⚡Calculate Field

Tool **Name:** Calculate **Field**
Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Fields\CalculateField

⚡Parameters:

Name	Direction	Type	Data Type	Value
Input Table	Input	Required	Table View	parcel_samp
Field Name	Input	Required	Field	Parks
Expression	Input	Required	SQL Expression	1
Output Feature Class	Output	Derived	Table View	parcel_samp

⚡Messages:

Spatial Model to determine proximity to Public Transportation and Major Roads

Variables

- ⚡parcel
 - Data** **Type:**Table **View**
 - Value:**parcel
- ⚡Field Name
 - Data** **Type:**String
 - Value:**PubTran9
- ⚡parcel_route
 - Data** **Type:**Table **View**
 - Value:**parcel
- ⚡allroutes_y1p2
 - Data** **Type:**Table **View**
 - Value:**allroutes_y1p2
- ⚡Change the Variable
 - Data** **Type:**SQL **Expression**
 - Value:**"FID" >= 0
- ⚡Routes
 - Data** **Type:**Table **View**
 - Value:**allroutes_y1p2
- ⚡PubTran1000
 - Data** **Type:**Feature **Layer**
 - Value:**parcel
- ⚡parcel_route (3)
 - Data** **Type:**Table **View**
 - Value:**parcel
- ⚡PubTran300

Data <i>Value:</i> parcel	Type: Feature	Layer
✦ parcel_route (2)		
Data <i>Value:</i> parcel	Type: Table	View
✦ PubTran100		
Data <i>Value:</i> parcel	Type: Feature	Layer
✦ parcel_route (1)		
Data <i>Value:</i> parcel	Type: Table	View

Processes






✦ **Add Field**

Tool **Name:**Add Field
Tool Source:C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Fields\AddField

✦ **Parameters:**

Name	Direction	Type	Data Type	Value
Input Table	Input	Required	Table View	parcel
Field Name	Input	Required	String	PubTran9
Field Type	Input	Required	String	LONG
Field Precision	Input	Optional	Long	
Field Scale	Input	Optional	Long	
Field Length	Input	Optional	Long	
Field Alias	Input	Optional	String	
Field IsNullable	Input	Optional	Boolean	false
Field IsRequired	Input	Optional	Boolean	false
Field Domain	Input	Optional	String	
Output Feature Class	Output	Derived	Table View	parcel

✦ **Messages:**

-  Executing (Add Field): AddField parcel PubTran9 LONG # # # # NON_NULLABLE NON_REQUIRED # parcel
-  Start Time: Tue Dec 19 14:26:33 2006
-  Adding PubTran9 to parcel...
-  Executed (Add Field) successfully.
-  End Time: Tue Dec 19 14:27:33 2006 (Elapsed Time: 1 minutes 0 seconds)

✦ **Select Layer By Attribute**





Tool **Name:**Select Layer By Attribute
Tool Source:C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Layers and Table Views\SelectLayerByAttribute

✦ **Parameters:**

Name	Direction	Type	Data Type	Value
Layer Name or Table View	Input	Required	Table View	allroutes_y1p2
Selection type	Input	Optional	String	NEW_SELECTION

Expression	Input	Optional	SQL Expression	"FID" >= 0
Output Layer Name	Output	Derived	Table View	allroutes_y1p2

Messages:

-  Executing (Select Layer By Attribute): SelectLayerByAttribute allroutes_y1p2 NEW_SELECTION ""FID" >= 0" allroutes_y1p2
-  Start Time: Tue Dec 19 14:27:33 2006
-  Executed (Select Layer By Attribute) successfully.
-  End Time: Tue Dec 19 14:27:33 2006 (Elapsed Time: 0.00 seconds)





Select Layer By Location (3)

Tool **Name:**Select Layer By Location
Tool Source:C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Layers and Table Views\SelectLayerByLocation

Parameters:

Name	Direction	Type	Data Type	Value
Input Layer	Input	Required	Feature Layer	parcel
Overlap Type	Input	Optional	String	WITHIN_A_DISTANCE
Select Layer	Input	Optional	Feature Layer	allroutes_y1p2
Search Distance	Input	Optional	Linear unit	1000 Feet
Selection type	Input	Optional	String	NEW_SELECTION
Output Layer Name	Output	Derived	Feature Layer	parcel

Messages:

-  Executing (Select Layer By Location (3)): SelectLayerByLocation parcel WITHIN_A_DISTANCE allroutes_y1p2 "1000 Feet" NEW_SELECTION parcel
-  Start Time: Tue Dec 19 14:27:33 2006
-  Executed (Select Layer By Location (3)) successfully.
-  End Time: Tue Dec 19 14:28:41 2006 (Elapsed Time: 1 minutes 8 seconds)


Calculate Field (3)




Tool **Name:**Calculate Field
Tool Source:C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Fields\CalculateField

Parameters:

Name	Direction	Type	Data Type	Value
Input Table	Input	Required	Table View	parcel
Field Name	Input	Required	Field	PubTran9
Expression	Input	Required	SQL Expression	3
Output Feature Class	Output	Derived	Table View	parcel

Messages:

-  Executing (Calculate Field (3)): CalculateField parcel PubTran9 3 parcel

-  Start Time: Tue Dec 19 14:28:41 2006
-  Executed (Calculate Field (3)) successfully.
-  End Time: Tue Dec 19 14:29:54 2006 (Elapsed Time: 1 minutes 13 seconds)





Select Layer By Location (2)

Tool Name:Select Layer By Location
Tool Source:C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Layers and Table Views\SelectLayerByLocation

Parameters:

Name	Direction	Type	Data Type	Value
Input Layer	Input	Required	Feature Layer	parcel
Overlap Type	Input	Optional	String	WITHIN_A_DISTANCE
Select Layer	Input	Optional	Feature Layer	allroutes_y1p2
Search Distance	Input	Optional	Linear unit	300 Feet
Selection type	Input	Optional	String	NEW_SELECTION
Output Layer Name	Output	Derived	Feature Layer	parcel

Messages:

-  Executing (Select Layer By Location (2)): SelectLayerByLocation parcel WITHIN_A_DISTANCE allroutes_y1p2 "300 Feet" NEW_SELECTION parcel
-  Start Time: Tue Dec 19 14:29:54 2006
-  Executed (Select Layer By Location (2)) successfully.
-  End Time: Tue Dec 19 14:30:34 2006 (Elapsed Time: 40.00 seconds)





Calculate Field (2)

Tool Name:Calculate Field
Tool Source:C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Fields\CalculateField

Parameters:

Name	Direction	Type	Data Type	Value
Input Table	Input	Required	Table View	parcel
Field Name	Input	Required	Field	PubTran9
Expression	Input	Required	SQL Expression	2
Output Feature Class	Output	Derived	Table View	parcel

Messages:

-  Executing (Calculate Field (2)): CalculateField parcel PubTran9 2 parcel
-  Start Time: Tue Dec 19 14:30:34 2006
-  Executed (Calculate Field (2)) successfully.
-  End Time: Tue Dec 19 14:31:37 2006 (Elapsed Time: 1 minutes 3 seconds)





Select Layer By Location (1)

Tool Name: Select Layer By Location
Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Layers and Table Views\SelectLayerByLocation

Parameters:

Name	Direction	Type	Data Type	Value
Input Layer	Input	Required	Feature Layer	parcel
Overlap Type	Input	Optional	String	WITHIN_A_DISTANCE
Select Layer	Input	Optional	Feature Layer	allroutes_y1p2
Search Distance	Input	Optional	Linear unit	100 Feet
Selection type	Input	Optional	String	NEW_SELECTION
Output Layer Name	Output	Derived	Feature Layer	parcel

Messages:

-  Executing (Select Layer By Location (1)): SelectLayerByLocation parcel WITHIN_A_DISTANCE allroutes_y1p2 "100 Feet" NEW_SELECTION parcel
-  Start Time: Tue Dec 19 14:31:37 2006
-  Executed (Select Layer By Location (1)) successfully.
-  End Time: Tue Dec 19 14:32:10 2006 (Elapsed Time: 33.00 seconds)





Calculate Field (1)

Tool Name: Calculate Field
Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Fields\CalculateField

Parameters:

Name	Direction	Type	Data Type	Value
Input Table	Input	Required	Table View	parcel
Field Name	Input	Required	Field	PubTran9
Expression	Input	Required	SQL Expression	1
Output Feature Class	Output	Derived	Table View	parcel

Messages:

-  Executing (Calculate Field (1)): CalculateField parcel PubTran9 1 parcel
-  Start Time: Tue Dec 19 14:32:10 2006
-  Executed (Calculate Field (1)) successfully.
-  End Time: Tue Dec 19 14:33:22 2006 (Elapsed Time: 1 minutes 12 seconds)

Spatial Model to determine proximity to Parks

Variables

Parcels

Data Type: Feature
Value: parcel_samp Layer

Field Name			
<i>Data</i>			Type: String
<i>Value:</i> Parks			
parcel_samp			
<i>Data</i>	Type: Table		View
<i>Value:</i> parcel_samp			
new_os_samp (2)			
<i>Data</i>	Type: Table		View
<i>Value:</i> new_os_samp			
Change the Variable			
<i>Data</i>	Type: SQL		Expression
<i>Value:</i> "TYPE" = 'PARK'			
Parks			
<i>Data</i>	Type: Table		View
<i>Value:</i> new_os_samp			
Parcels_Half			
<i>Data</i>	Type: Feature		Layer
<i>Value:</i> parcel_samp			
parcel_samp (4)			
<i>Data</i>	Type: Table		View
<i>Value:</i> parcel_samp			
Parcels_Quarter			
<i>Data</i>	Type: Feature		Layer
<i>Value:</i> parcel_samp			
parcel_samp (3)			
<i>Data</i>	Type: Table		View
<i>Value:</i> parcel_samp			
Parcels_Adjacent			
<i>Data</i>	Type: Feature		Layer
<i>Value:</i> parcel_samp			
parcel_samp (2)			
<i>Data</i>	Type: Table		View
<i>Value:</i> parcel_samp			

Processes

Add Field			
<i>Tool</i>	Name: Add		Field
<i>Tool Source:</i> C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Fields\AddField			

Parameters:

<i>Name</i>	<i>Direction</i>	<i>Type</i>	<i>Data Type</i>	<i>Value</i>
Input Table	Input	Required	Table View	parcel_samp
Field Name	Input	Required	String	Parks
Field Type	Input	Required	String	LONG
Field Precision	Input	Optional	Long	
Field Scale	Input	Optional	Long	
Field Length	Input	Optional	Long	
Field Alias	Input	Optional	String	
Field IsNullable	Input	Optional	Boolean	false
Field IsRequired	Input	Optional	Boolean	false
Field Domain	Input	Optional	String	

Output Feature Class	Output	Derived	Table View	parcel_samp
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✦ Messages:

✦ Select Layer By Attribute

Tool Name: Select Layer By Attribute
Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Layers and Table Views\SelectLayerByAttribute

✦ Parameters:

Name	Direction	Type	Data Type	Value
Layer Name or Table View	Input	Required	Table View	new_os_samp
Selection type	Input	Optional	String	NEW_SELECTION
Expression	Input	Optional	SQL Expression	"TYPE" = 'PARK'
Output Layer Name	Output	Derived	Table View	new_os_samp

✦ Messages:

✦ Select Layer By Location (3)

Tool Name: Select Layer By Location
Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Layers and Table Views\SelectLayerByLocation

✦ Parameters:

Name	Direction	Type	Data Type	Value
Input Layer	Input	Required	Feature Layer	parcel_samp
Overlap Type	Input	Optional	String	WITHIN_A_DISTANCE
Select Layer	Input	Optional	Feature Layer	new_os_samp
Search Distance	Input	Optional	Linear unit	0.5 Miles
Selection type	Input	Optional	String	NEW_SELECTION
Output Layer Name	Output	Derived	Feature Layer	parcel_samp

✦ Messages:

✦ Calculate Field (3)

Tool Name: Calculate Field
Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Fields\CalculateField

✦ Parameters:

Name	Direction	Type	Data Type	Value
Input Table	Input	Required	Table View	parcel_samp
Field Name	Input	Required	Field	Parks
Expression	Input	Required	SQL Expression	3
Output Feature Class	Output	Derived	Table View	parcel_samp

✦ Messages:

✦ Select Layer By Location (2)

Tool Name: Select Layer By Location
Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Layers and Table Views\SelectLayerByLocation

✚Parameters:

<i>Name</i>	<i>Direction</i>	<i>Type</i>	<i>Data Type</i>	<i>Value</i>
Input Layer	Input	Required	Feature Layer	parcel_samp
Overlap Type	Input	Optional	String	WITHIN_A_DISTANCE
Select Layer	Input	Optional	Feature Layer	new_os_samp
Search Distance	Input	Optional	Linear unit	0.25 Miles
Selection type	Input	Optional	String	NEW_SELECTION
Output Layer Name	Output	Derived	Feature Layer	parcel_samp

✚Messages:

✚Calculate Field (2)

Tool *Name:* Calculate Field
Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Fields\CalculateField

✚Parameters:

<i>Name</i>	<i>Direction</i>	<i>Type</i>	<i>Data Type</i>	<i>Value</i>
Input Table	Input	Required	Table View	parcel_samp
Field Name	Input	Required	Field	Parks
Expression	Input	Required	SQL Expression	2
Output Feature Class	Output	Derived	Table View	parcel_samp

✚Messages:

✚Select Layer By Location

Tool *Name:* Select Layer By Location
Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Layers and Table Views\SelectLayerByLocation

✚Parameters:

<i>Name</i>	<i>Direction</i>	<i>Type</i>	<i>Data Type</i>	<i>Value</i>
Input Layer	Input	Required	Feature Layer	parcel_samp
Overlap Type	Input	Optional	String	BOUNDARY_TOUCHES
Select Layer	Input	Optional	Feature Layer	new_os_samp
Search Distance	Input	Optional	Linear unit	
Selection type	Input	Optional	String	NEW_SELECTION
Output Layer Name	Output	Derived	Feature Layer	parcel_samp

✚Messages:

✚Calculate Field

Tool *Name:* Calculate Field
Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Fields\CalculateField

✚Parameters:

<i>Name</i>	<i>Direction</i>	<i>Type</i>	<i>Data Type</i>	<i>Value</i>
Input Table	Input	Required	Table View	parcel_samp
Field Name	Input	Required	Field	Parks
Expression	Input	Required	SQL Expression	1
Output Feature Class	Output	Derived	Table View	parcel_samp

✚ Messages:

Spatial Model to determine proximity to Public Transportation and Major Roads

Variables






✚ parcel			
<i>Data</i>	<i>Type:</i> Table		View
<i>Value:</i> parcel			
✚ Field Name			
<i>Data</i>		<i>Type:</i> String	
<i>Value:</i> PubTran9			
✚ parcel_route			
<i>Data</i>	<i>Type:</i> Table		View
<i>Value:</i> parcel			
✚ allroutes_y1p2			
<i>Data</i>	<i>Type:</i> Table		View
<i>Value:</i> allroutes_y1p2			
✚ Change the Variable			
<i>Data</i>	<i>Type:</i> SQL		Expression
<i>Value:</i> "FID" >= 0			
✚ Routes			
<i>Data</i>	<i>Type:</i> Table		View
<i>Value:</i> allroutes_y1p2			
✚ PubTran1000			
<i>Data</i>	<i>Type:</i> Feature		Layer
<i>Value:</i> parcel			
✚ parcel_route (3)			
<i>Data</i>	<i>Type:</i> Table		View
<i>Value:</i> parcel			
✚ PubTran300			
<i>Data</i>	<i>Type:</i> Feature		Layer
<i>Value:</i> parcel			
✚ parcel_route (2)			
<i>Data</i>	<i>Type:</i> Table		View
<i>Value:</i> parcel			
✚ PubTran100			
<i>Data</i>	<i>Type:</i> Feature		Layer
<i>Value:</i> parcel			
✚ parcel_route (1)			
<i>Data</i>	<i>Type:</i> Table		View
<i>Value:</i> parcel			

Processes

✚ Add Field			
<i>Tool</i>	<i>Name:</i> Add		Field
<i>Tool Source:</i> C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Fields\AddField			
✚ Parameters:			

<i>Name</i>	<i>Direction</i>	<i>Type</i>	<i>Data Type</i>	<i>Value</i>
Input Table	Input	Required	Table View	parcel
Field Name	Input	Required	String	PubTran9
Field Type	Input	Required	String	LONG
Field Precision	Input	Optional	Long	
Field Scale	Input	Optional	Long	
Field Length	Input	Optional	Long	
Field Alias	Input	Optional	String	
Field IsNullable	Input	Optional	Boolean	false
Field IsRequired	Input	Optional	Boolean	false
Field Domain	Input	Optional	String	
Output Feature Class	Output	Derived	Table View	parcel

Messages:

-  Executing (Add Field): AddField parcel PubTran9 LONG # # # # NON_NULLABLE NON_REQUIRED # parcel
-  Start Time: Tue Dec 19 14:26:33 2006
-  Adding PubTran9 to parcel...
-  Executed (Add Field) successfully.
-  End Time: Tue Dec 19 14:27:33 2006 (Elapsed Time: 1 minutes 0 seconds)





Select Layer By Attribute

Tool Name:Select Layer By Attribute
Tool Source:C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Layers and Table Views\SelectLayerByAttribute

Parameters:

<i>Name</i>	<i>Direction</i>	<i>Type</i>	<i>Data Type</i>	<i>Value</i>
Layer Name or Table View	Input	Required	Table View	allroutes_y1p2
Selection type	Input	Optional	String	NEW_SELECTION
Expression	Input	Optional	SQL Expression	"FID" >= 0
Output Layer Name	Output	Derived	Table View	allroutes_y1p2

Messages:

-  Executing (Select Layer By Attribute): SelectLayerByAttribute allroutes_y1p2 NEW_SELECTION ""FID" >= 0" allroutes_y1p2
-  Start Time: Tue Dec 19 14:27:33 2006
-  Executed (Select Layer By Attribute) successfully.
-  End Time: Tue Dec 19 14:27:33 2006 (Elapsed Time: 0.00 seconds)





Select Layer By Location (3)

Tool Name:Select Layer By Location
Tool Source:C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Layers and Table Views\SelectLayerByLocation

✦Parameters:

<i>Name</i>	<i>Direction</i>	<i>Type</i>	<i>Data Type</i>	<i>Value</i>
Input Layer	Input	Required	Feature Layer	parcel
Overlap Type	Input	Optional	String	WITHIN_A_DISTANCE
Select Layer	Input	Optional	Feature Layer	allroutes_y1p2
Search Distance	Input	Optional	Linear unit	1000 Feet
Selection type	Input	Optional	String	NEW_SELECTION
Output Layer Name	Output	Derived	Feature Layer	parcel

✦Messages:

-  Executing (Select Layer By Location (3)): SelectLayerByLocation parcel WITHIN_A_DISTANCE allroutes_y1p2 "1000 Feet" NEW_SELECTION parcel
-  Start Time: Tue Dec 19 14:27:33 2006
-  Executed (Select Layer By Location (3)) successfully.
-  End Time: Tue Dec 19 14:28:41 2006 (Elapsed Time: 1 minutes 8 seconds)





✦Calculate Field (3)

Tool **Name:**Calculate **Field**
Tool Source:C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Fields\CalculateField

✦Parameters:

<i>Name</i>	<i>Direction</i>	<i>Type</i>	<i>Data Type</i>	<i>Value</i>
Input Table	Input	Required	Table View	parcel
Field Name	Input	Required	Field	PubTran9
Expression	Input	Required	SQL Expression	3
Output Feature Class	Output	Derived	Table View	parcel

✦Messages:

-  Executing (Calculate Field (3)): CalculateField parcel PubTran9 3 parcel
-  Start Time: Tue Dec 19 14:28:41 2006
-  Executed (Calculate Field (3)) successfully.
-  End Time: Tue Dec 19 14:29:54 2006 (Elapsed Time: 1 minutes 13 seconds)

✦Select Layer By Location (2)





Tool **Name:**Select **Layer** **By** **Location**
Tool Source:C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Layers and Table Views\SelectLayerByLocation

✦Parameters:

<i>Name</i>	<i>Direction</i>	<i>Type</i>	<i>Data Type</i>	<i>Value</i>
Input Layer	Input	Required	Feature Layer	parcel
Overlap Type	Input	Optional	String	WITHIN_A_DISTANCE
Select Layer	Input	Optional	Feature Layer	allroutes_y1p2
Search Distance	Input	Optional	Linear unit	300 Feet

Selection type	Input	Optional	String	NEW_SELECTION
Output Layer Name	Output	Derived	Feature Layer	parcel

Messages:

-  Executing (Select Layer By Location (2)): SelectLayerByLocation parcel WITHIN_A_DISTANCE allroutes_y1p2 "300 Feet" NEW_SELECTION parcel
-  Start Time: Tue Dec 19 14:29:54 2006
-  Executed (Select Layer By Location (2)) successfully.
-  End Time: Tue Dec 19 14:30:34 2006 (Elapsed Time: 40.00 seconds)

Calculate Field (2)





Tool **Name:** Calculate **Field**

Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Fields\CalculateField

Parameters:

Name	Direction	Type	Data Type	Value
Input Table	Input	Required	Table View	parcel
Field Name	Input	Required	Field	PubTran9
Expression	Input	Required	SQL Expression	2
Output Feature Class	Output	Derived	Table View	parcel

Messages:

-  Executing (Calculate Field (2)): CalculateField parcel PubTran9 2 parcel
-  Start Time: Tue Dec 19 14:30:34 2006
-  Executed (Calculate Field (2)) successfully.
-  End Time: Tue Dec 19 14:31:37 2006 (Elapsed Time: 1 minutes 3 seconds)

Select Layer By Location (1)


Tool **Name:** Select Layer By Location




Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Layers and Table Views\SelectLayerByLocation

Parameters:

Name	Direction	Type	Data Type	Value
Input Layer	Input	Required	Feature Layer	parcel
Overlap Type	Input	Optional	String	WITHIN_A_DISTANCE
Select Layer	Input	Optional	Feature Layer	allroutes_y1p2
Search Distance	Input	Optional	Linear unit	100 Feet
Selection type	Input	Optional	String	NEW_SELECTION
Output Layer Name	Output	Derived	Feature Layer	parcel

Messages:

-  Executing (Select Layer By Location (1)): SelectLayerByLocation parcel WITHIN_A_DISTANCE allroutes_y1p2 "100 Feet" NEW_SELECTION parcel

-  Start Time: Tue Dec 19 14:31:37 2006
-  Executed (Select Layer By Location (1)) successfully.
-  End Time: Tue Dec 19 14:32:10 2006 (Elapsed Time: 33.00 seconds)





Calculate Field (1)

Tool **Name:** Calculate **Field**
Tool Source: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\Data Management Tools.tbx\Fields\CalculateField

Parameters:

Name	Direction	Type	Data Type	Value
Input Table	Input	Required	Table View	parcel
Field Name	Input	Required	Field	PubTran9
Expression	Input	Required	SQL Expression	1
Output Feature Class	Output	Derived	Table View	parcel

Messages:

-  Executing (Calculate Field (1)): CalculateField parcel PubTran9 1 parcel
-  Start Time: Tue Dec 19 14:32:10 2006
-  Executed (Calculate Field (1)) successfully.
-  End Time: Tue Dec 19 14:33:22 2006 (Elapsed Time: 1 minutes 12 seconds)

Potential Site Ranking

As stated above, for the purposes of demonstrating the site prioritization potential of this model, a dataset of suitable sites established by the process described above was evaluated against the senior demographic data within a half-mile radius of each of the potential sites. The resulting report presents a ranking of the suitable sites from the site with the highest number of senior citizens within the half mile buffer to the site, which although it still meets the basic location criteria, has the lowest number of senior citizens near it. The following table represents a segment of the report generated by tallying the senior demographic data near each selected site. This segment lists 12 ranked sites. The properties owned by the City of Raleigh meeting many of the location requirements are represented in **red**.

**TABLE E-1
 DEMOGRAPHIC RANKING OF POTENTIAL SITES**

PIN_NUM	P55_TO_59	P60_TO_64	P65_TO_69	P70_TO_74	P75_TO_84	P85_OLDER	TOT_SR_POP	Floodplain	Streams
1717518000	576	366	229	150	177	27	1525	0	0
1712261136	230	185	178	138	148	29	908	0	0
1713436076	230	185	178	138	148	29	908	1	1
1713342617	209	175	142	116	141	32	815	0	0
1713436076	209	175	142	116	141	32	815	1	1
1726018231	193	188	154	103	81	18	737	0	0
7979910625	231	158	123	97	85	15	709	0	1
1706163731	130	126	149	133	130	19	687	0	0
1725015634	139	103	108	70	114	69	603	0	1

1714610267	96	62	60	68	147	88	521	0	0
1714612428	95	84	76	86	113	18	472	0	0
1705922836	49	39	35	38	142	147	450	1	1

Since the sites shown here have very close demographic rating, each site that this model identifies should be looked at individually. A second level of subjective analysis involves ownership. If a suitable, high-ranking parcel is owned by the city, then property acquisition costs can be avoided. Finally, the third level of the subjective analysis of these potential sites comes from an actual view of the parcels themselves and a determination of available land sufficient to construct a Senior Center and its accompanying site amenities and parking. It should be noted here that, even if some of the sites identified higher in the table are not selected for the single, stand-alone Senior Center, they are at least good candidates for satellite expansions of senior programs.

On pages following Figure E-1, are views of a number of sites generated from IMAPS (Internet Multi Access Parcel System), an online mapping service provided by the City of Raleigh and Wake County's GIS departments.