PIN3 Physical Activity Postpartum Study

Spatial Data Development & Analysis

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Table of Contents

I. Introduction

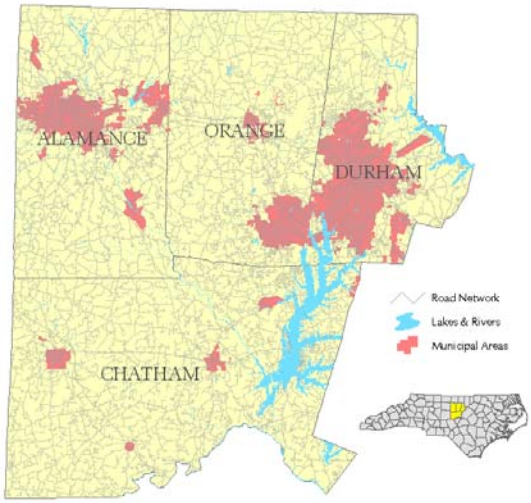
Purpose of this Document

This large document contains the complete description of all spatial data and spatial analyses in the PIN Postpartum Study. It is meant to be a resource for anyone who needs to understand what spatial data are used in the project and what analyses have been performed. This document is not meant to be the sole documentation for the study, but only covers the spatial component.

Study Areas for PIN Postpartum

The PIN Postpartum study is located in the four central North Carolina counties of Alamance, Chatham, Durham and Orange (see figure below).

The original study area extent included Wake County, but Wake was removed from the study in the spring of 2005. At that time, the study area was being evaluated for the Road Segment Audit that was planned for the summer of 2005. The plan was to select block groups for the audit based on those that had a high concentration of study participants living in them. The study participants in Wake County are spread out, and there are very few block groups that meet the criteria in place at that time, so Wake was eliminated from the study. After Wake was removed, the audit road segment selection methodology was changed, but by that time the majority of the spatial data had been created and/or processed for only the four remaining counties.



NOTE: This document contains URLs and hyperlinks that were active as of the time they were added. No effort has been made to verify that they are still active.

II. Contact Information and Data Development Credit

Primary Contact for Spatial Data

Brian Frizzelle
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Data Development Credit

The following people contributed to the development of the spatial database:

Annie Lux

- crime
- bike paths
- noise
- traffic volume
- HUD
- bus routes

Lindy Nelson

- parks
- public facilities, including gyms & community centers
- facilities
- schools
- crime
- trails

David Bergmark

- road updates
- hand corrections of geocoded participant locations
- modification of building footprints for analysis

Leigh Ann Cienek

- road updates
- hand corrections of participant locations

III. Spatial Data Descriptions

This section contains descriptions of the various datasets in the PIN Postpartum Study spatial database. The datasets are organized into two main categories: Primary and Secondary. Primary data include any dataset that was used in the creation of the constructed variables (see Appendix II). Secondary data include all other datasets that were used for other purposes or simply collected and processed as part of the project.

Primary datasets are listed by their descriptive title, in alphabetical order. Secondary datasets are categorized, then ordered alphabetically. Each dataset contains a list of characteristics, followed by a description of the data.

All data, unless otherwise noted, are located under the directory `\PIN\Postpartum\Features` and are georeferenced to the North Carolina State Plane Coordinate System, NAD83 Horizontal Datum, Feet.

Primary Spatial Datasets

100' Road Section Midpoints with Slope Values

Filename: `Roads_Detailed_SlopeVals`
Location: `\Roads_100ftSegs.mdb`
Type: Feature Class
Feature Geometry: Point
Number of Features: 398,072
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/Updated: 23 January 2008
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: see below
Metadata Exists?: No
Metadata Origin:

This point feature class contains the midpoints of the features **100' Road Sections** dataset, with slope values assigned to each midpoint. The dataset was created by overlaying the midpoints of the **100' Road Section Midpoints** dataset on the **Slope** raster and extracting the values using the **Extract Values to Points** tool in ArcMap.

Bus Stops, Study Area

Filename: `Bus_Stops_Final`
Location: `\PIN_Postpartum.mdb\Routes`
Type: Feature Class
Feature Geometry: Point
Number of Features: 1,884

Source:	Chapel Hill Transit Durham Area Transit Authority Triangle Transit Authority
Date Created/Updated:	6 November 2007
Contacts:	Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?:	Yes
Modification:	see below
Metadata Exists?:	No
Metadata Origin:	

This point feature class is comprised of bus stop locations from the three transit authorities in the study area: Chapel Hill Transit, Durham Area Transit Authority, and Triangle Transit Authority. The three datasets (**Bus Stops, Chapel Hill Transit**, **Bus Stops, Durham Area Transit (DATA)**, and **Bus Stops, Triangle Transit Authority (TTA)**) were merged together. The locations were then overlaid on aerial photos and imported into Google Earth to look for erroneous locations. Any locations that were obviously in the wrong area or could not be verified were deleted.

Census Blocks (2000) for Study Area

Filename:	`Blocks_PPP`
	`Block_Census2000_Rel`
	`Census2000_Block`

Location:	`\PIN_Postpartum.mdb\Postpartum_Region`
	`\PIN_Postpartum.mdb\Postpartum_Region`
	`\PIN_Postpartum.mdb`

Type:	Feature Class Relationship Class Table
Feature Geometry:	Polygon NA NA
Number of Features:	11,383
Source:	NC General Assembly Redistricting Data website http://www.ncleg.net/redistricting/Data/Data.html
Date Created/Updated:	12 August 2005
Contacts:	NC General Assembly Redistricting Data website
Modified by SAU?:	No
Modification:	
Metadata Exists?:	No
Metadata Origin:	

This polygon feature class contains the 2000 census block boundaries for the four counties in the PIN Postpartum study. The dataset was subset from the statewide dataset of census blocks.

This is a multi-part dataset. The spatial features are contained in the `Blocks_PPP` feature class and the park attributes are contained in the `Census2000_Block`

Geodatabase table. There is a Geodatabase relationship class called `Block_Census2000_Rel` that relates the attribute table to the feature class.

Detailed Roads (County-Level), Study Area

Filename: `Roads_Detailed`
Location: `\Roads.mdb\Road_Data`
Type: Feature Class
Feature Geometry: Line
Number of Features: 41,678
Source: Spatial Analysis Unit, Carolina Population Center
various county GIS departments
Date Created/Updated: 22 April 2008
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: see Appendix V for further info
Metadata Exists?: No
Metadata Origin:

This line feature class is an aggregation of county-level road files from Alamance, Chatham, Durham and Orange counties (see **Roads, Alamance**, **Roads, Chatham**, **Roads, Durham**, and **Roads, Orange**). A previous version of this road dataset was used as the basis for the Road Segment Audit in the summer of 2005, but since then, it has been cleaned completely and made topologically sound.

There are two drawbacks to using this dataset in analysis, although they are minor. First, many road segments are missing street names. These are primarily located in Alamance and Chatham counties, although there are some roads in Orange and Durham without names. Second, there are and will always be roads missing from the dataset due to the rapid nature of neighborhood development throughout the study area.

Hydrography, Study Area (State Plane, Feet)

Filename: `hydro_studyarea_spft`
Location: `\Hydrography.mdb`
Type: Feature Class
Feature Geometry: Polygon
Number of Features: 11,424
Source: NCGIA, NC DOT; data grabbed from UNC Davis Library GIS repository
Date Created/ Updated: January 2006
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: see below
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains detailed 1:24,000-scale hydrological features (lakes and rivers) for the study area. It was subset from the **Hydrography, All Three Basins (polygon)** feature class and reprojected to North Carolina State Plane, Feet.

Hydrography Area by Respondent by Neighborhood Type

Filenames:	`freqHyNbrhd_Euc1M`
	`freqHyNbrhd_EucQM`
	`freqHyNbrhd_Net1M`
	`freqHyNbrhd_NetQM`

Location:	`\Hydrography.mdb`
Type:	Geodatabase tables
Feature Geometry:	N/A
Number of Records:	1,184 (Euclidean ¼ mile) 2,423 (Euclidean 1 mile) 622 (network ¼ mile) 2,143 (network 1 mile)
Source:	Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated:	December 2007
Contacts:	Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?:	No
Modification:	
Metadata Exists?:	No
Metadata Origin:	

This is the only dataset (or datasets) in the Primary category that is not spatial. These tables were created prior to running the script for the **Respondent Neighborhood Areas and Amount of Water in each Neighborhood** constructed variables to speed up processing time and reduce problems with memory leaks. One table was created for each of the four neighborhood types, and there is one record for each respondent location that contains some amount of water features within the neighborhood. That is why there is a different number of records for each table. Each record has an area of water features, in square feet, associated with the respondent's `UniqueID`.

Intersections from Detailed Roads (County-Level), Study Area

Filename:	`Road_Data_Intersections`
Location:	`\Roads.mdb\Road_Data`
Type:	Feature Class
Feature Geometry:	Point
Number of Features:	33,834
Source:	Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated:	28 April 2008
Contacts:	Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?:	Yes
Modification:	see below
Metadata Exists?:	No
Metadata Origin:	

This point feature class contains all road intersections in the study area. The points were created by copying the features over from the **Detailed Roads, Network Dataset, Junctions** dataset. A Visual Basic script, Calculate Fnode Tnode 1.1, was downloaded (http://arcscripts.esri.com/details.asp?dbid=11702) from the ESRI Arcscripts website that created a field called Valence, which contained the number of segments intersecting the point. This variable was then copied over to a new attribute called IntCount.

It was later discovered that the IntCount numbers were incorrect in some situations. For example, the intersection between a straight segment and a looped segment (e.g. cul-de-sac) should be a 3-way intersection, because one could go three different directions from that location. However, because only two segments intersect at that point, the IntCount was assigned a 2. These situations were manually corrected.

The last change made to this dataset was the categorization of intersection type based on road Tier. This was done in an attribute called TierType. The TierType attribute categorizes each intersection in one of nine groups:

- Primary-Primary PP *n* = 13
- Primary-Secondary PS *n* = 322
- Primary-Tertiary PT *n* = 4
- Primary-Dead End P-DE *n* = 8
- Secondary-Secondary SS *n* = 2,736
- Secondary-Tertiary ST *n* = 8,609
- Secondary-Dead End S-DE *n* = 131
- Tertiary-Tertiary TT *n* = 11,372
- Tertiary-Dead End T-DE *n* = 10,639

Land Use Parcels, Chapel Hill and Durham

Filename: LandUse_CHDurham
Location: \PIN_Postpartum.mdb\Postpartum_Region
Type: Feature Class
Feature Geometry: Polygon
Number of Features: 107,601
Source: Spatial Analysis Unit, Carolina Population Center
UNC GIS Librarian, Amanda Henley
Date Created/ Updated: January 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: see below
Metadata Exists?: No
Metadata Origin:

These polygon feature class is a composite dataset containing tax parcels from Chapel Hill and Durham County. The two datasets – **Land Use 2005, Chapel Hill**

and **Land Use 2005, Durham County** – were edgematched and merged together. Then their land use types were recoded into eight new categories. See Appendix VI for detailed information on the re-categorization.

Land Use Parcels, Non-Water

Filename: `LandUse_CHDurham_NoWater`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Type: Feature Class
Feature Geometry: Polygon
Number of Features: 107,554
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: March 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: see below
Metadata Exists?: No
Metadata Origin:

These polygon features represent the Chapel Hill and Durham County tax parcels, minus water features. It was created by erasing the water features (**Hydrography, Study Area**) from the **Land Use Parcels, Chapel Hill and Durham** dataset.

Land Use Parcels, Residential, Non-Water, for Chapel Hill and Durham County

Filename: `LandUse_CHDurham_Residential_NoWater`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polygon
Number of Features: 79,385
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 9 August 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains residential tax parcel boundaries, minus water features, for the Town of Chapel Hill and Durham County. It was created by erasing the water features (**Hydrography, Study Area**) from the **Land Use Parcels, Residential, for Chapel Hill and Durham County** dataset.

Land Use Parcels, Residential, for Chapel Hill and Durham County

Filename: `LandUse_CHDurham_Residential`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polygon
Number of Features: 79,589
Source: Spatial Analysis Unit, Carolina Population Center
UNC GIS Librarian, Amanda Henley
Date Created/ Updated: 9 August 2007

Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains only residential tax parcel boundaries for the Town of Chapel Hill and Durham County. It was subset from the **Land Use Parcels, Chapel Hill and Durham** dataset.

Land Use Parcel Centroids

Filename: `LandUse_CHDurham_Centroids`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Type: Feature Class
Feature Geometry: Point
Number of Features: 107,601
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: January 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

These point features are the centroids of the tax parcels in the **Land Use Parcels, Chapel Hill and Durham** dataset. They are used as destination locations for calculating distances.

Land Use Parcel Centroids, Non-Water

Filename: `LandUse_CHDurham_NoWater_Centroids`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Type: Feature Class
Feature Geometry: Point
Number of Features: 107,554
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: March 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

These point features are the centroids of the non-water tax parcels in the **Land Use Parcels, Non-Water** dataset. They are used as destination locations for calculating distances or for inclusion in neighborhood inclusion processes.

Parks

Filename:	`Parks`
	`Parks_Rel`
	`ParksAtt`

Location:	`\PIN_Postpartum.mdb\Postpartum_Region`
	`\PIN_Postpartum.mdb\Postpartum_Region`
	`\PIN_Postpartum.mdb`

Type:	Feature Class Relationship Class Table
Feature Geometry:	Polygon NA NA
Number of Features:	91
Source:	multiple (see Appendix VII)
Date Created/ Updated:	16 August 2007
Contacts:	Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?:	Yes
Modification:	Compiled from various sources by SAU (see Appendix VII)
Metadata Exists?:	No
Metadata Origin:	

This polygon feature class contains all federal, state and local parks in the four-county PIN Postpartum study area. There are 91 parks represented as single-part and multi-part polygons. There are over 200 attribute fields associated with each park, although no park has data for every attribute.

This is a multi-part dataset. The spatial features are contained in the `Parks` feature class and the park attributes are contained in the `ParksAtt` Geodatabase table. There is a Geodatabase relationship class called `Parks_Rel` that relates the attribute table to the feature class.

The dataset was compiled from many different sources. The sources and methodology are outlined in Appendix VII.

Park Access Points, Road Access

Filename:	`Parks_AccessPoints_Road`
Location:	`\PIN_Postpartum.mdb\Postpartum_Region`
Type:	Feature Class
Feature Geometry:	Point
Number of Features:	196
Source:	Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated:	1 June 2007
Contacts:	Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?:	No
Modification:	
Metadata Exists?:	No

Metadata Origin:

The point features represent locations along the road network where one can enter a park. They were subset from the larger **Park Access Points** dataset, which contains both road and walking access points for all of the parks in the **Parks** dataset.

PinPost Participant Locations

Filename: `PinPost_Participants`
Location: `\PIN_Postpartum.mdb\Women`
Type: Feature Class
Feature Geometry: Point
Number of Features: 2,444
Source: PIN Project
Date Created/ Updated: 1 June 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: see Appendix III for details on the development of this dataset
Metadata Exists?: No
Metadata Origin:

This point feature class contains 2,444 locations for 1,491 participants in both the PIN3 and PIN Postpartum studies in the four study area counties. These locations were compiled from GPS coordinates collected in the field during home visits, hand-corrected geocoded locations, and manually-placed locations.

Geocoded locations were hand-corrected using a combination of county-level tax parcel layers, online county GIS tax parcel map databases, 1998 DOQQs, Google Maps & Google Earth, and fieldwork. The same sources were used for hand placement of locations, which was done when an address exists for a respondent but was neither GPS'ed nor geocoded. In some cases, the locations could not be verified nor corrected due to: a) the roads not existing in our data, b) the roads and/or house being newer than the DOQQs or tax parcel data, c) the roads not existing in Google Maps, d) the imagery in Google Maps being too coarse for house identification, or e) a combination of factors a-d. In all cases the hand corrections were done in reference to the **Detailed Roads (County-Level), Study Area** feature class.

See Appendix III for a more detailed discussion of the development of this dataset.

PinPost Participant Locations, Within ¼ Mile of Chapel Hill-Durham Land Use Boundary

Filename: `PinPost_Participants_LU_WithinQM`
Location: `\PIN_Postpartum.mdb\Women`
Type: Feature Class
Feature Geometry: Point
Number of Features: 1,111
Source: PIN Project

Date Created/ Updated: 1 June 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This point feature class contains the locations of participants that live within the Chapel Hill municipal boundary and/or Durham County (**Land Use Study Area Boundary, Chapel Hill and Durham**), but that live no closer than ¼ mile from the boundary of this subset area. These locations were subset from the **PinPost Participant Locations** dataset to be used in conjunction with ¼-mile Euclidean and network neighborhood analysis of parcel-based land use data.

PinPost Participant Locations, Within 1 Mile of Chapel Hill-Durham Land Use Boundary

Filename: `PinPost_Participants_LU_Within1M`
Location: `\PIN_Postpartum.mdb\Women`
Type: Feature Class
Feature Geometry: Point
Number of Features: 847
Source: PIN Project
Date Created/ Updated: 1 June 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This point feature class contains the locations of participants that live within the Chapel Hill municipal boundary and/or Durham County (**Land Use Study Area Boundary, Chapel Hill and Durham**), but that live no closer than 1 mile from the boundary of this subset area. These locations were subset from the **PinPost Participant Locations** dataset to be used in conjunction with 1-mile Euclidean and network neighborhood analysis of parcel-based land use data.

PinPost Participant One-Mile Euclidean Neighborhoods

Filename: `PinPost_Participants_Euc1M`
Location: `\PIN_Postpartum.mdb\Women`
Feature Geometry: Polygon
Number of Features: 2,444
Source: PIN Project
Date Created/ Updated: 1 June 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains one-mile Euclidean buffer neighborhood polygons around each of the locations in the **PinPost Participant Locations** feature class.

PinPost Participant One-Mile Euclidean Neighborhoods, Chapel Hill and Durham Only

Filename: `PinPost_Participants_Euc1M_LU_Within1M`
Location: `\PIN_Postpartum.mdb\Women`
Feature Geometry: Polygon
Number of Features: 847
Source: PIN Project
Date Created/ Updated: 1 June 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains one-mile Euclidean buffer neighborhood polygons around each of the locations in the **PinPost Participant Locations, Within 1 Mile of Chapel Hill-Durham Land Use Boundary** feature class.

PinPost Participant One-Mile Network Neighborhoods

Filename: `PinPost_NetSvcAreas_1M`
Location: `\Roads.mdb\NetServiceAreas`
Feature Geometry: Polygon
Number of Features: 2,444
Source: PIN Project
Date Created/ Updated: 1 June 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains one-mile network service area neighborhood polygons around each of the locations in the **PinPost Participant Locations** feature class.

PinPost Participant One-Mile Network Neighborhoods, Chapel Hill and Durham Only

Filename: `PinPost_NetSvcAreas_1M_LU_Within1M`
Location: `\Roads.mdb\NetServiceAreas`
Feature Geometry: Polygon
Number of Features: 847
Source: PIN Project
Date Created/ Updated: 1 June 2007

Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains one-mile network service area neighborhood polygons around each of the locations in the **PinPost Participant Locations, Within 1 Mile of Chapel Hill-Durham Land Use Boundary** feature class.

PinPost Participant Quarter-Mile Euclidean Neighborhoods

Filename: `PinPost_Participants_EucQM`
Location: `\PIN_Postpartum.mdb\Women`
Feature Geometry: Polygon
Number of Features: 2,444
Source: PIN Project
Date Created/ Updated: 1 June 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains one-mile Euclidean buffer neighborhood polygons around each of the locations in the **PinPost Participant Locations** feature class.

PinPost Participant Quarter-Mile Euclidean Neighborhoods, Chapel Hill and Durham Only

Filename: `PinPost_Participants_EucQM_LU_WithinQM`
Location: `\PIN_Postpartum.mdb\Women`
Feature Geometry: Polygon
Number of Features: 1,111
Source: PIN Project
Date Created/ Updated: 1 June 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains one-mile Euclidean buffer neighborhood polygons around each of the locations in the **PinPost Participant Locations, Within ¼ Mile of Chapel Hill-Durham Land Use Boundary** feature class.

PinPost Participant Quarter-Mile Network Neighborhoods

Filename: `PinPost_NetSvcAreas_QM`
Location: `\Roads.mdb\NetServiceAreas`

Feature Geometry: Polygon
Number of Features: 2,444
Source: PIN Project
Date Created/ Updated: 1 June 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains one-mile network service area neighborhood polygons around each of the locations in the **PinPost Participant Locations** feature class.

PinPost Participant Quarter-Mile Network Neighborhoods, Chapel Hill and Durham Only

Filename: `PinPost_NetSvcAreas_QM_LU_WithinQM`
Location: `\Roads.mdb\NetServiceAreas`
Feature Geometry: Polygon
Number of Features: 1,111
Source: PIN Project
Date Created/ Updated: 1 June 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains one-mile network service area neighborhood polygons around each of the locations in the **PinPost Participant Locations, Within ¼ Mile of Chapel Hill-Durham Land Use Boundary** feature class.

Recreational Facility Locations

Filename: `Recreational_Facilities`
Location: `\PIN_Postpartum.mdb\Facilities`
Feature Geometry: Point
Number of Features: 119
Source: Reference USA, SAU
Date Created/ Updated: 1 June 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

These point features represent locations of recreational facilities within the study area. The list of facility addresses was compiled by Lindy Nelson from the Reference USA database. The addresses were then geocoded, and those locations were manually

checked and hand corrected when necessary. For more detailed information on the creation of the facility list, see Appendix VIII.

Slope

Filename: `pinslp_100ft`
Location: `\Raster\Topography`
Feature Geometry: Raster
Size (row x col): 2675 x 2543
Cell Resolution: 100 feet
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 13 August 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This dataset was derived from the **Digital Elevation Model, 100' Resolution** dataset in ArcInfo GRID, using the **SLOPE** command. Each raster cell, which has a spatial resolution of 100 feet, contains a value which represents the percent slope of the terrain.

Study Area Boundary Line

Filename: `StudyRegion_PPP_BdryLine`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polyline
Number of Features: 1
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 6 December 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This line feature class is the boundary for the PIN Postpartum study area. It was created by converting the **Study Area Polygon** feature class to a line feature class. It contains the area within the four study counties.

Study Area Polygon

Filename: `StudyRegion_PPP`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polygon
Number of Features: 1
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 5 February 2005
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit

Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class is the boundary for the PIN Postpartum study area. It was created by dissolving the county boundaries in the **Counties (Block Group-based), PinPost** feature class. It contains the area within the four study counties.

Tax Parcel Centroids, with Total Value Calculated

Filename: `PinPost_Parcel_Centroids_TotalValue`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Point
Number of Features: 241,888
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 21 November 2006
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

These point features represent the centroids of the tax parcel datasets for Alamance County (**Tax Parcels, Alamance County**), Chatham County (**Tax Parcels, Chatham County**), Durham County (**Tax Parcels, Durham County**), and Orange County (**Tax Parcels, Orange County**). The centroids were created for each dataset separately, and then merged together into one complete feature class. Due to the large number of parcel polygons, no effort was made to eliminate or correct coincident parcels (i.e. parcels claimed by two or more counties). The attribute fields representing the tax value of the parcels and buildings were normalized, and then summed to create a total tax value for each parcel centroid.

Secondary Spatial Datasets

Boundaries

This category includes all political, administrative, physical, and arbitrary boundary files. It does not include census units (see the Census & Demographics section) nor does it contain cadastral data (see the Cadastral section), such as tax parcels.

City Boundary, Carrboro (line)

Filename: `CBO_citylimitsline83`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polyline
Number of Features: 17

Source: Town of Carrboro Geographic Information Systems Department
http://www.ci.carrboro.nc.us/gis/default.htm
Date Created/ Updated: 1 November 2007
Contacts: Town of Carrboro Geographic Information Systems Department
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains the boundary lines for the Town of Carrboro.

City Boundary, Carrboro (polygon)

Filename: `CBO_citylimitsline83`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 5
Source: Town of Carrboro Geographic Information Systems Department
http://www.ci.carrboro.nc.us/gis/default.htm
Date Created/ Updated: 1 November 2007
Contacts: Town of Carrboro Geographic Information Systems Department
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains the boundary polygons for the Town of Carrboro.

Counties, North Carolina

Filename: `Counties_NC`
Location: `\Miscellaneous_Features.mdb\NC_Features_NAD83_StatePlane_Ft`
Feature Geometry: Polygon
Number of Features: 100
Source: NC General Assembly Redistricting Data website
http://www.ncleg.net/redistricting/Data/Data.html
Date Created/ Updated: 12 October 2004
Contacts: NC General Assembly Redistricting Data website
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the county boundaries for the state of North Carolina.

Counties (Block Group-based), North Carolina

Filename: `Counties_NC_BGDiss`
Location: `\Miscellaneous_Features.mdb\NC_Features_NAD83_StatePlane_Ft`
Feature Geometry: Polygon
Number of Features: 100
Source: **Census Block Groups (2000) for North Carolina** feature class

Date Created/ Updated: 19 October 2004
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: Blockgroup polygons were dissolved to create county features.
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the county boundaries for the state of North Carolina. Itwas generated by dissolving the boundaries of the **Census Block Groups (2000) for North Carolina** feature class using the county FIPS code. The result is a county feature class that has boundaries that exactly match those of the block groups.

Counties, PinPost

Filename: `Counties_PPP`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polygon
Number of Features: 4
Source: NC General Assembly Redistricting Data website
http://www.ncleg.net/redistricting/Data/Data.html
Date Created/ Updated: 12 October 2004
Contacts: NC General Assembly Redistricting Data website
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the county boundaries for the four counties in the PIN Postpartum study. There are four county polygons in it. The dataset was subset from the **Counties, North Carolina** feature class.

Counties (Block Group-based), PinPost

Filename: `Counties_PPP_BGDiss`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polygon
Number of Features: 4
Source: **Census Block Groups (2000) for North Carolina** feature class
Date Created/ Updated: 19 October 2004
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: Blockgroup polygons were dissolved to create county features.
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the county boundaries for the four counties in the PIN Postpartum study. There are four county polygons in it. The dataset was subset from the **Counties (Block Group-based), North Carolina** feature class.

County Boundary, Durham

Filename: `Durham_County`
Location: `\PIN_CountyData.mdb\Durham_Data`
Feature Geometry: Polygon
Number of Features: 1
Source: **Counties (Block Group-based), PinPost** feature class
Date Created/ Updated: 4 April 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains the boundary polygon of the county of Durham. It was subset from the feature class **Counties (Block Group-based), PinPost.**

Land Use Study Area Boundary, Chapel Hill

Filename: `LandUse2005_ChapelHill_Bndry`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 1
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: January 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains one polygon that represents the spatial extent of the Chapel Hill land use parcel polygons. It was created by dissolving all of the **Land Use 2005, Chapel Hill** polygons.

Land Use Study Area Boundary, Chapel Hill and Durham

Filename: `LandUse_CHDurham_Boundary`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polygon
Number of Features: 1
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: January 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains one polygon that represents the spatial extent of the Chapel Hill and Durham County land use parcel polygons. It was created by dissolving all of the **Land Use Parcels, Chapel Hill and Durham** polygons.

LIDAR Image Reference Grid

Filename: `FMIS_Terrain_Grid`
Location: `\Miscellaneous_Features.mdb\NC_Features_NAD83_StatePlane_Ft`
Feature Geometry: Polygon
Number of Features: 15,138
Source: North Carolina Floodplain Mapping Project
http://www.ncfloodmaps.com
Date Created/ Updated: 12 October 2004
Contacts: North Carolina Floodplain Mapping Project
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class consists of a regular grid that is related to the high-resolution LIDAR digital elevation model (DEM) data produced by the North Carolina Floodplain Mapping Project. Each polygon represents one raster DEM, and contains attribute information indicating whether or not a LIDAR DEM currently exists for that location. This dataset can be used to identify high-resolution terrain data for download from the website.

Municipalities, North Carolina

Filename: `Places_NC`
Location: `\Miscellaneous_Features.mdb\NC_Features_NAD83_StatePlane_Ft`
Feature Geometry: Polygon
Number of Features: 655
Source: NC General Assembly Redistricting Data website
http://www.ncleg.net/redistricting/Data/Data.html
Date Created/ Updated: 12 October 2004
Contacts: NC General Assembly Redistricting Data website
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the boundaries for all municipalities in the state of North Carolina. It consists of multi-part polygons that represent 655 different municipalities.

Municipalities, PinPost

Filename: `Places_PPP`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polygon
Number of Features: 24
Source: NC General Assembly Redistricting Data website
http://www.ncleg.net/redistricting/Data/Data.html
Date Created/ Updated: 12 October 2004
Contacts: NC General Assembly Redistricting Data website

Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the boundaries for all municipalities in the four counties in the PIN Postpartum study. It consists of multi-part polygons that represent 24 different municipalities. Some of the municipal boundaries partly fall outside our four-county study area. The dataset was subset from the **Municipalities, North Carolina** feature class.

Municipalities, PinPost plus Wake County

Filename: `Places_PPP_plusWake`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polygon
Number of Features: 35
Source: NC General Assembly Redistricting Data website
http://www.ncleg.net/redistricting/Data/Data.html
Date Created/ Updated: 12 October 2004
Contacts: NC General Assembly Redistricting Data website
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the boundaries for all municipalities in the four counties in the PIN Postpartum study, plus Wake County. It consists of multi-part polygons that represent 35 different municipalities. Some of the municipal boundaries partly fall outside the five counties. The dataset was subset from the **Municipalities, North Carolina** feature class.

Political Boundaries, Orange County

Filename: `Orange_PoliticalAreas`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 27
Source:
Date Created/ Updated:
Contacts:
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains a variety of different political boundaries for Orange County. Currently, the source, currency and contacts are unknown.

Public Access Areas, Carrboro

Filename: `CBO_DedPubAccessAccepted`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 40
Source: Town of Carrboro Geographic Information Systems Department
http://www.ci.carrboro.nc.us/gis/default.htm
Date Created/ Updated: 1 November 2007
Contacts: Town of Carrboro Geographic Information Systems Department
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains dedicated public access easements and deeded acreage in the Town of Carrboro. These are easements and parcels that have been dedicated to the Town for a greenway system.

Secondary Zones Polygons

Filename: `Secondary_Zones`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polygon
Number of Features: 2,276
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 1 February 2008
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: see below
Metadata Exists?: No
Metadata Origin:

This feature class contains large area polygons that represent arbitrary “neighborhoods” for the purposes of the study. See Appendix IV for a description of how these neighborhoods were created.

State Boundary, North Carolina

Filename: `StateBoundary_NC`
Location: `\Miscellaneous_Features.mdb\NC_Features_NAD83_StatePlane_Ft`
Feature Geometry: Polygon
Number of Features: 1
Source: NC General Assembly Redistricting Data website
http://www.ncleg.net/redistricting/Data/Data.html
Date Created/ Updated: 12 October 2004
Contacts: NC General Assembly Redistricting Data website
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class is the state boundary for North Carolina.

Tertiary Neighborhood Polygons

Filename: `TertiaryNbrhdPolygons`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polygon
Number of Features: 14,087
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 22 April 2008
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: see below
Metadata Exists?: No
Metadata Origin:

This feature class contains small polygons that represent tertiary neighborhoods. See Appendix IV for a description of how these neighborhoods were created.

Townships, North Carolina

Filename: `Townships_NC`
Location: `\Miscellaneous_Features.mdb\NC_Features_NAD83_StatePlane_Ft`
Feature Geometry: Polygon
Number of Features: 1,051
Source: NC General Assembly Redistricting Data website
http://www.ncleg.net/redistricting/Data/Data.html
Date Created/ Updated: 12 October 2004
Contacts: NC General Assembly Redistricting Data website
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the township boundaries for the state of North Carolina.

Townships, PinPost

Filename: `Townships_PPP`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polygon
Number of Features: 39
Source: NC General Assembly Redistricting Data website
http://www.ncleg.net/redistricting/Data/Data.html
Date Created/ Updated: 12 October 2004
Contacts: NC General Assembly Redistricting Data website
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the township boundaries for the four counties in the PIN Postpartum study.

Traffic Analysis Zones 2000, North Carolina

Filename: `TrafficAnalysisZones_NC`
Location: `\Miscellaneous_Features.mdb\NC_Features_NAD83_StatePlane_Ft`
Feature Geometry: Polygon
Number of Features: 8,167
Source: U.S. Census Bureau
http://www.census.gov/geo/www/cob/tz_metadata.html
Date Created/ Updated: 18 July 2006
Contacts: U.S. Census Bureau
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

A traffic analysis zone (TAZ) is a special area delineated by state and/or local transportation officials for tabulating traffic-related data- especially journey-to-work and place-of-work statistics. A TAZ usually consists of one or more census blocks, block groups, or census tracts. TAZ polygons are only available for 30 of the 100 NC counties: Alexander, Buncombe, Burke, Cabarrus, Caldwell, Catawba, Chatham, Cleveland, Cumberland, Durham, Forsyth, Franklin, Gaston, Granville, Harnett, Henderson, Iredell, Johnston, Lincoln, Mecklenburg, New Hanover, Onslow, Orange, Person, Pitt, Rowan, Stanly, Union, Wake, and Wayne.

Traffic Analysis Zones 2000, PinPost

Filename: `TrafficAnalysisZones_PPP`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polygon
Number of Features: 915
Source: U.S. Census Bureau
http://www.census.gov/geo/www/cob/tz_metadata.html
Date Created/ Updated: 18 July 2006
Contacts: U.S. Census Bureau
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

Traffic analysis zones subset for the study area from **Traffic Analysis Zones 2000, North Carolina**. TAZ polygons are only available for Chatham, Durham and Orange counties.

Zip Codes, North Carolina

Filename: `Zips_NC`
Location: `\Miscellaneous_Features.mdb\NC_Features_NAD83_StatePlane_Ft`
Feature Geometry: Polygon

Number of Features: 735
Source: NC General Assembly Redistricting Data website
http://www.ncleg.net/redistricting/Data/Data.html
Date Created/ Updated: 12 October 2004
Contacts: NC General Assembly Redistricting Data website
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the zip code boundaries for the state of North Carolina.

Zip Points, North Carolina

Filename: `ZipPts_NC`
Location: `\Miscellaneous_Features.mdb\NC_Features_NAD83_StatePlane_Ft`
Feature Geometry: Point
Number of Features: 1,074
Source: NC General Assembly Redistricting Data website
http://www.ncleg.net/redistricting/Data/Data.html
Date Created/ Updated: 12 October 2004
Contacts: NC General Assembly Redistricting Data website
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This point feature class contains zip code points for the state of North Carolina.

Zip+4 Points, North Carolina

Filename: `ZipPlus4Pts_NC`
Location: `\Miscellaneous_Features.mdb\NC_Features_NAD83_StatePlane_Ft`
Feature Geometry: Point
Number of Features: 1,025,282
Source: UNC GIS Librarian, Amanda Henley
Date Created/ Updated: 22 March 2006
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This point feature class contains the Zip+4 point locations for the state of North Carolina.

Zoning, Carrboro (Orange County)

Filename: `Zoning_Carrboro`
Location: `\PIN_CountyData.mdb.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 63

Source: Carrboro GIS Specialist, via the UNC GIS Librarian (Amanda Henley)
Date Created/ Updated: 12 November 2004
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the zoning areas for the Town of Carrboro in Orange County. Each polygon contains its primary zoning code.

Zoning, Carrboro Multizone (Orange County)

Filename: `Zoning_CarrboroMultizone`
Location: `\PIN_CountyData.mdb.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 28
Source: Carrboro GIS Specialist, via the UNC GIS Librarian (Amanda Henley)
Date Created/ Updated: 12 November 2004
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the multizone areas for the Town of Carrboro in Orange County. Each polygon contains multiple spatially explicit zoning codes.

Zoning, Carrboro Overlay Districts (Orange County)

Filename: `Zoning_CboOverlayDistrics`
Location: `\PIN_CountyData.mdb.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 5
Source: Carrboro GIS Specialist, via the UNC GIS Librarian (Amanda Henley)
Date Created/ Updated: 12 November 2004
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the zoning overlay areas for the Town of Carrboro in Orange County. These are areas of additional zoning that overlay areas zoned by Carrboro, and both zoning codes are in effect in these areas.

Zoning, Cary

Filename: `Zoning_Cary`
Location: `\Miscellaneous_Features.mdb\Wake_Data`
Feature Geometry: Polygon
Number of Features: 783

Source: Wake County GIS website
http://www.wakegov.com/county/propertyandmapping/gisdigitaldata.htm
Date Created/ Updated: 19 October 2004
Contacts: Wake County GIS website
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains the zoning areas for the city of Cary.

Zoning, Chapel Hill (Orange County)

Filename: `Zoning_ChapelHill`
Location: `\PIN_CountyData.mdb.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 189
Source: Chapel Hill GIS Specialist, via the UNC GIS Librarian (Amanda Henley)
Date Created/ Updated: 12 November 2004
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the zoning areas for the Town of Chapel Hill in Orange County. Each polygon contains its primary zoning code.

Zoning, Chapel Hill Overlay Districts (Orange County)

Filename: `Zoning_CHOverlayDistrics`
Location: `\PIN_CountyData.mdb.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 6
Source: Chapel Hill GIS Specialist, via the UNC GIS Librarian (Amanda Henley)
Date Created/ Updated: 12 November 2004
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the zoning overlay areas for the Town of Chapel Hill in Orange County. These are areas of additional zoning that overlay areas zoned by Chapel Hill, and both zoning codes are in effect in these areas.

Zoning, Durham County

Filename: `Zoning_DurhamCounty`
Location: `\PIN_CountyData.mdb.mdb\Durham_Data`
Feature Geometry: Polygon
Number of Features: 1,707

Source: UNC GIS database
Date Created/ Updated: 12 November 2004
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the zoning areas for Durham County. It was produced by the Durham County GIS Department.

Zoning, Orange County

Filename: `Zoning_OrangeCounty`
Location: `\PIN_CountyData.mdb.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 302
Source: UNC GIS database
Date Created/ Updated: 11 January 2005
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the zoning data for Orange County, outside of Chapel Hill and Carrboro.

Zoning, Pittsboro (Chatham County)

Filename: `Zoning_Pittsboro`
Location: `\PIN_CountyData.mdb\Chatham_Data`
Feature Geometry: Polygon
Number of Features: 81
Source: Chatham County GIS Specialist – Jeremy Poss
Date Created/ Updated: 4 November 2004
Contacts: Jeremy Poss, Chatham County GIS Specialist (jeremy.poss@ncmail.net; 919-545-8469)
David Monroe, Pittsboro City Planner (919-542-4621 ext 34)
Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the zoning areas for the city of Pittsboro in Chatham County.

Zoning, Siler City (Chatham County)

Filename: `Zoning_SilerCity`
Location: `\PIN_CountyData.mdb\Chatham_Data`

Feature Geometry: Polygon
Number of Features: 63
Source: Chatham County GIS Specialist – Jeremy Poss
Date Created/ Updated: 4 November 2004
Contacts: Jeremy Poss, Chatham County GIS Specialist (jeremy.poss@ncmail.net; 919-545-8469)
Jack Meadows, Siler City City Planner (919-742-2323)
Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the zoning areas for the city of Siler City in Chatham County.

Zoning, US 15-501 Corridor (Chatham County)

Filename: `Zoning_15501Corridor`
Location: `\PIN_CountyData.mdb\Chatham_Data`
Feature Geometry: Polygon
Number of Features: 1,300
Source: Chatham County GIS Specialist – Jeremy Poss
Date Created/ Updated: 4 November 2004
Contacts: Jeremy Poss, Chatham County GIS Specialist (jeremy.poss@ncmail.net; 919-545-8469)
Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the zoning areas for the US 15-501 corridor in Chatham County.

Zoning, Wake County

Filename: `Zoning_WakeCounty`
Location: `\Miscellaneous_Features.mdb\Wake_Data`
Feature Geometry: Polygon
Number of Features: 396
Source: Wake County GIS website
http://www.wakegov.com/county/propertyandmapping/gisdigitaldata.htm
Date Created/ Updated: 19 October 2004
Contacts: Wake County GIS website
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the zoning areas for Wake County.

Zoning, Wake County Overlay Districts

Filename: `Zoning_WakeOverlayDistricts`
Location: `\Miscellaneous_Features.mdb\Wake_Data`
Feature Geometry: Polygon
Number of Features: 33
Source: Wake County GIS website
http://www.wakegov.com/county/propertyandmapping/gisdigitaldata.htm
Date Created/ Updated: 19 October 2004
Contacts: Wake County GIS website
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the zoning overlay areas for Wake County.

Cadastral

This category contains all datasets related to properties, such as tax parcels.

Tax Parcels, Alamance County

Filename: `Alamance_Parcels`
`Alamance_Parcels_Tax`
`Alamance_Tax`
Location: `\PIN_CountyData.mdb\Alamance_Data`
`\PIN_CountyData.mdb\Alamance_Data`
`\PIN_CountyData.mdb`
Type: Feature Class
Relationship Class
Table
Feature Geometry: Polygon
NA
NA
Number of Features: 62,875
Source: Alamance County GIS website
http://www.alamance-nc.com/gis/
Date Created/ Updated: 15 October 2004
Contacts: Alamance County GIS department
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the tax parcel boundaries for Alamance County. This is a multi-part dataset. The spatial features are contained in the `Alamance_Parcels` feature class and the park attributes are contained in the `Alamance_Tax` Geodatabase table. There is a Geodatabase relationship class called `Alamance_Parcels_Tax` that relates the attribute table to the feature class.

Tax Parcels, Chapel Hill

Filename: `ChapelHill_Parcels`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 13,645
Source: UNC GIS Librarian, Amanda Henley
Date Created/ Updated: 31 January 2006
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains the tax parcel boundaries for Chapel Hill. Attributes include land use.

Tax Parcels, Chatham County

Filename: `Chatham_Parcels`
Location: `\PIN_CountyData.mdb\Chatham_Data`
Feature Geometry: Polygon
Number of Features: 37,380
Source: Chatham County GIS Specialist – Jeremy Poss
Date Created/ Updated: 27 January 2006
Contacts: Jeremy Poss, Chatham County GIS Specialist (jeremy.poss@ncmail.net; 919-545-8469)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the tax parcel boundaries for Chatham County. Attributes include land use.

Tax Parcels, Durham County

Filename: `Durham_Parcels`
Location: `\PIN_CountyData.mdb\Durham_Data`
Feature Geometry: Polygon
Number of Features: 94,134
Source: UNC GIS Librarian, Amanda Henley
Date Created/ Updated: 19 October 2004
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the tax parcel boundaries for Durham County. It was obtained from the University of North Carolina online AFS database, and was produced by the Durham County GIS Department.

Tax Parcels, Durham County, Non-Hydro

Filename: `Durham_Parcels_NoWater`
Location: `\PIN_CountyData.mdb\Durham_Data`
Feature Geometry: Polygon
Number of Features: 94,087
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 7 March 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: Hydro areas erased from parcel polygons.
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the tax parcel boundaries for Durham County, minus water features. It was created by erasing the water features in the **Hydrography, PinPost Study Area (State Plane, Feet)** feature class from the **Tax Parcels, Durham County** feature class.

Tax Parcels, Orange County

Filename: `Orange_ParcelData`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 48,298
Source: UNC GIS Librarian, Amanda Henley
Date Created/ Updated: 19 October 2004
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the tax parcel boundaries for Orange County. It was produced by the Orange County GIS Department.

Tax Parcels, Wake County

Filename: `Wake_Parcels`
Location: `\Miscellaneous_Features.mdb\Wake_Data`
Feature Geometry: Polygon
Number of Features: 277,036
Source: UNC GIS Librarian, Amanda Henley
Date Created/ Updated: 19 October 2004
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No

Metadata Origin:

Tax Parcel Centroids, Durham County

Filename: `Durham_Parcels_Centroids`
Location: `\PIN_CountyData.mdb\Durham_Data`
Feature Geometry: Point
Number of Features:
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 3 March 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This point feature class contains the centroids of the tax parcel boundaries for Durham County. It was created from the **Tax Parcels, Durham County** feature class.

Tax Parcel Centroids, Orange County

Filename: `Orange_Parcels_Centroids`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Point
Number of Features: 48,298
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 1 February 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: Centroids of the **Tax Parcels, Orange County** polygon features were created, making sure to keep the centroids within the polygons.
Metadata Exists?: No
Metadata Origin:

This point feature class contains the centroids of the tax parcel boundaries for Orange County. It was created from the **Tax Parcels, Orange County** feature class.

Census & Demographics

This category contains all datasets related census geography and demographic (i.e. population) data.

Census Blocks (2000) for Study Area, Non-Water

Filename: `Blocks_PPP_NoWater`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polygon
Number of Features: 11,335
Source: Spatial Analysis Unit, Carolina Population Center

Date Created/ Updated: January 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: see below
Metadata Exists?: No
Metadata Origin:

This feature class contains the polygons from the **Census Blocks (2000) for Study Area** feature class with water features removed. The water features in the **Hydrography, Study Area (State Plane, Feet)** feature class were erased from the parcel polygons. This was done to provide non-water land areas for the generation of several constructed variables (see Section IV).

Census Block Groups (2000) for North Carolina

Filename: `BlockGroups_NC`
Location: `\Miscellaneous_Features.mdb\NC_Features_NAD83_StatePlane_Ft`
Feature Geometry: Polygon
Number of Features: 5,263
Source: NC General Assembly Redistricting Data website
http://www.ncleg.net/redistricting/Data/Data.html
Date Created/ Updated: 12 October 2004
Contacts: NC General Assembly Redistricting Data website
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This dataset contains the 2000 census block group boundaries for the state of North Carolina.

Census Block Groups (2000) for Study Area

Filename: `BlockGroups_PPP`
`Blockgroup_Census2000_Rel`
`Census2000_Blockgroup`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
`\PIN_Postpartum.mdb\Postpartum_Region`
`\PIN_Postpartum.mdb`
Type: Feature Class
Relationship Class
Table
Feature Geometry: Polygon
NA
NA
Number of Features: 312
Source: NC General Assembly Redistricting Data website
http://www.ncleg.net/redistricting/Data/Data.html
Date Created/ Updated: 12 October 2004
Contacts: NC General Assembly Redistricting Data website
Modified by SAU?: No
Modification:

Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the 2000 census block group boundaries for the four counties in the PIN Postpartum study. The dataset was subset from the **Census Block Groups (2000) for North Carolina** feature class.

This is a multi-part dataset. The spatial features are contained in the `BlockGroups_PPP` feature class and the park attributes are contained in the `Census2000_Blockgroup` Geodatabase table. There is a Geodatabase relationship class called `Blockgroup_Census2000_Rel` that relates the attribute table to the feature class.

Census Tracts (2000) for North Carolina

Filename: `Tracts_NC`
Location: `\Miscellaneous_Features.mdb\NC_Features_NAD83_StatePlane_Ft`
Feature Geometry: Polygon
Number of Features: 1,555
Source: NC General Assembly Redistricting Data website
http://www.ncleg.net/redistricting/Data/Data.html
Date Created/ Updated: 12 October 2004
Contacts: NC General Assembly Redistricting Data website
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the 2000 census tract boundaries for the state of North Carolina.

Census Tracts (2000) for Study Area

Filename: `Tracts_PPP`
`Tract_Census2000_Rel`
`Census2000_Tract`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
`\PIN_Postpartum.mdb\Postpartum_Region`
`\PIN_Postpartum.mdb`
Type: Feature Class
Relationship Class
Table
Feature Geometry: Polygon
NA
NA
Number of Features: 106
Source: NC General Assembly Redistricting Data website
http://www.ncleg.net/redistricting/Data/Data.html
Date Created/ Updated: 12 October 2004
Contacts: NC General Assembly Redistricting Data website

Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the 2000 census tract boundaries for the four counties in the PIN Postpartum study. The dataset was subset from the **Census Tracts (2000) for North Carolina** feature class.

This is a multi-part dataset. The spatial features are contained in the `Tracts_PPP` feature class and the park attributes are contained in the `Census2000_Tract` Geodatabase table. There is a Geodatabase relationship class called `Tract_Census2000_Rel` that relates the attribute table to the feature class.

Imagery

This category contains all imagery products (e.g. aerial photos, satellite imagery).

1998 Color Infrared Digital Orthophoto Quarter Quads (Aerial Photos)

Filename(s): `*.sid`
Location: `\Raster\DOQs_1998CIR`
Feature Geometry: Raster
Size (row x col): varies
Cell Resolution: 1 meter
Source: State of North Carolina
Date Created/ Updated: 1998
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This directory contains numerous 1998 color infrared DOQQ air photos covering all of our four-county study area. All of the images are in MrSID format. They are used primarily for reference when checking the positional accuracy of participants and/or road segments.
All DOQQs are georeferenced to the North Carolina State Plane Coordinate System, NAD83 Horizontal Datum, Meters.

2002 Digital Orthophoto Quarter Quads (Aerial Photos), Chatham County

Filename: `*.sid`
Location: `\Raster\DOQs_2002Chatham`
Feature Geometry: Raster
Size (row x col): varies
Cell Resolution: varies

Source: Chatham County GIS FTP site
ftp://www.co.chatham.nc.us/
Date Created/ Updated: 2002
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This directory contains numerous 2002 color infrared DOQQ air photos covering Chatham County. All of the images are in MrSID format. Some images cover larger areas than others, and the spatial resolution varies from as small as 1 foot to up to 3 feet. They are used primarily for reference when checking the positional accuracy of participants and/or road segments.

2005 Digital Orthophoto Quarter Quads (Aerial Photos), Alamance County

Filename: `*.sid`
Location: `\Raster\DOQs_2005Alamance`
Feature Geometry: Raster
Size (row x col): varies
Cell Resolution: 0.5 feet
Source: Alamance County GIS data download website
http://www.alamance-nc.com/gisfiles/
Date Created/ Updated: 2005
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This directory contains numerous 2005 color infrared DOQQ air photos covering Chatham County. All of the images are in MrSID format. They are used primarily for reference when checking the positional accuracy of participants and/or road segments.

Physical & Environmental

This category contains any data that represent features of the physical or natural environment, such as water features and land use.

Floodplain Boundaries, Carrboro

Filename: `CBO_NCFloodmapFloodplain`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 945
Source: Town of Carrboro Geographic Information Systems Department
http://www.ci.carrboro.nc.us/gis/default.htm
Date Created/ Updated: 1 November 2007

Contacts: Town of Carrboro Geographic Information Systems Department
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature contains the updated flood insurance rate map (FIRM) data from the NC Floodplain Mapping website (http://www.ncfloodmaps.com). The data for Carrboro were made available on their GIS department's website.

Hydrography, All Three Basin (polygon)

Filename: `hy24_3basins_polygon`
Location: `\Hydrography.mdb`
Feature Geometry: Polygon
Number of Features: 116,216
Source: NCGIA, NC DOT; data grabbed from UNC Davis Library GIS repository
Date Created/ Updated: January 2006
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: The Cape Fear, Neuse and Roanoke polygon datasets were merged together to form this dataset.
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains detailed 1:24,000-scale hydrological features (rivers and lake outlines) for the Cape Fear River, Neuse River, and Roanoke River basins. The data are registered to North Carolina State Plane, Meters.

Hydrography, Cape Fear River Basin (line)

Filename: `hy24_cpfear_arc`
Location: `\Hydrography.mdb`
Feature Geometry: Polyline
Number of Features: 130,956
Source: NCGIA, NC DOT; data grabbed from UNC Davis Library GIS repository
Date Created/ Updated: 2002
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This line feature class contains detailed 1:24,000-scale hydrological features (lakes rivers) for the Cape Fear River basin. The data are registered to North Carolina State Plane, Meters.

Hydrography, Cape Fear River Basin (polygon)

Filename: `hy24_cpfear_polygon`
Location: `\Hydrography.mdb`
Feature Geometry: Polygon

Number of Features: 93,875
Source: NCGIA, NC DOT; data grabbed from UNC Davis Library GIS repository
Date Created/ Updated: 2002
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains detailed 1:24,000-scale hydrological features (rivers and lake outlines) for the Cape Fear River basin. The data are registered to North Carolina State Plane, Meters.

Hydrography, Neuse River Basin (line)

Filename: `hy24_neuse_arc`
Location: `\Hydrography.mdb`
Feature Geometry: Polyline
Number of Features: 86,578
Source: NCGIA, NC DOT; data grabbed from UNC Davis Library GIS repository
Date Created/ Updated: 2002
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This line feature class contains detailed 1:24,000-scale hydrological features (lakes rivers) for the Neuse River basin. The data are registered to North Carolina State Plane, Meters.

Hydrography, Neuse River Basin (polygon)

Filename: `hy24_neuse_polygon`
Location: `\Hydrography.mdb`
Feature Geometry: Polygon
Number of Features: 25,436
Source: NCGIA, NC DOT; data grabbed from UNC Davis Library GIS repository
Date Created/ Updated: 2002
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains detailed 1:24,000-scale hydrological features (rivers and lake outlines) for the Neuse River basin. The data are registered to North Carolina State Plane, Meters.

Hydrography, Roanoke River Basin (line)

Filename: `hy24_roanoke_arc`
Location: `\Hydrography.mdb`
Feature Geometry: Polyline
Number of Features: 37,106
Source: NCGIA, NC DOT; data grabbed from UNC Davis Library GIS repository
Date Created/ Updated: 2002
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This line feature class contains detailed 1:24,000-scale hydrological features (lakes rivers) for the Roanoke River basin. The data are registered to North Carolina State Plane, Meters.

Hydrography, Roanoke River Basin (polygon)

Filename: `hy24_roanoke_polygon`
Location: `\Hydrography.mdb`
Feature Geometry: Polygon
Number of Features: 9,634
Source: NCGIA, NC DOT; data grabbed from UNC Davis Library GIS repository
Date Created/ Updated: 2002
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains detailed 1:24,000-scale hydrological features (rivers and lake outlines) for the Roanoke River basin. The data are registered to North Carolina State Plane, Meters.

Hydrography, Study Area (State Plane, Meters)

Filename: `hydro_studyarea_spm`
Location: `\Hydrography.mdb`
Feature Geometry: Polygon
Number of Features: 11,424
Source: NCGIA, NC DOT; data grabbed from UNC Davis Library GIS repository
Date Created/ Updated: January 2006
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: The polygon features from **Hydrography, All Three Basin (polygon)** were subset to the extent of the PIN Postpartum four-county study area.
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains detailed 1:24,000-scale hydrological features (lakes and rivers) for the study area. The data are registered to North Carolina State Plane, Meters.

Land Use 2005, Carrboro

Filename: `LandUse2005_Carrboro`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 5,572
Source: Town of Carrboro (via Ruth Heaton and Daniel Rodriguez)
Date Created/ Updated: 15 June 2006
Contacts: Ruth Heaton, Town of Carrboro (rheaton@townofcarrboro.org)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains parcel-level land use data for the town of Carrboro.

Land Use 2005, Chapel Hill

Filename: `LandUse2005_ChapelHill`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 783
Source: UNC GIS Librarian, Amanda Henley
Date Created/ Updated: 31 January 2006
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains parcel-level land use data for the town of Chapel Hill. It was modified from the **Tax Parcels, Chapel Hill** feature class.

Land Use 2005, Durham County

Filename: `Durham_LandUse`
Location: `\PIN_CountyData.mdb\Durham_Data`
Feature Geometry: Polygon
Number of Features: 9
Source: UNC GIS Librarian, Amanda Henley
Date Created/ Updated: 15 June 2006
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains parcel-level land use data for Durham County. It contains multi-part polygons, which is why there are only nine features in the entire dataset.

Trees, Hardwood, Carrboro

Filename: `CBO_Hardwood`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 582
Source: Town of Carrboro Geographic Information Systems Department
http://www.ci.carrboro.nc.us/gis/default.htm
Date Created/ Updated: 27 April 2006
Contacts: Town of Carrboro Geographic Information Systems Department
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains polygons representing areas of hardwood tree cover in Carrboro.

Trees, Non-Hardwood, Carrboro

Filename: `CBO_TreesNotHardwood`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 1,398
Source: Town of Carrboro Geographic Information Systems Department
http://www.ci.carrboro.nc.us/gis/default.htm
Date Created/ Updated: 13 July 2004
Contacts: Town of Carrboro Geographic Information Systems Department
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains polygons representing areas of non-hardwood tree cover in Carrboro.

USGS National Land Cover Dataset

Filename(s): `nlcd_ppp`
Location: `\Raster\LandCover`
Feature Geometry: Raster GRID
Size (row x col): 2718 x 3925
Cell Resolution: 30 meters
Source: NC State GIS Academy
http://www.gisacademy.ncsu.edu/index.php
Date Created/ Updated: 19 October 2004
Contacts: NC State GIS Academy
Modified by SAU?: Yes

Modification: The raster datasets were downloaded by county, and were appended together into one raster GRID for the entire study area.
Metadata Exists?: No
Metadata Origin:

This ArcInfo GRID is a subset of the USGS National Land Cover Dataset, 30m land use/land cover data, for the four study counties plus Wake County. It was acquired from the NC State GIS Academy website in October of 2004. The data were downloaded on a county-by-county basis and merged together.
The NLCD layer is georeferenced to the North Carolina State Plane Coordinate System, NAD83 Horizontal Datum, Meters.

Wetland Areas, NWI, Carrboro

Filename: `CBO_NWIWetland`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 249
Source: Town of Carrboro Geographic Information Systems Department
http://www.ci.carrboro.nc.us/gis/default.htm
Date Created/ Updated: 27 April 2006
Contacts: Town of Carrboro Geographic Information Systems Department
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains polygons of wetland areas in Carrboro. The original source for this data is the National Wetland Inventory, but the features for Carrboro are made available on the Carrboro GIS website.

Places & Infrastructure

This category includes businesses, public and private recreation areas, health care facilities, building footprints, planimetrics and other public- and private-sector infrastructure, excluding transportation.

Bike Lanes & Paths, Carrboro (Orange County)

Filename: `Bikeways_Carrboro`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polyline
Number of Features: 214
Source: UNC GIS Librarian, Amanda Henley
Date Created/ Updated: 19 October 2004
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No

Metadata Origin:

This line feature class represents the bike lanes and bike paths in the Town of Carrboro.

Bike Lanes & Paths, Orange County (Limited)

Filename: `Bikeways_Orange_Ltd`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polyline
Number of Features: 4
Source: Orange County Land Records/GIS
Date Created/ Updated: 27 January 2005
Contacts: Patti Smith, GIS Database Administrator, Orange County Land Records/GIS (psmith@co.orange.nc.us, 919-245-2504)
Modified by SAU?: Yes
Modification: Extracted just the bike paths from the **extrastreets.shp** shapefile.
Metadata Exists?: No
Metadata Origin:

This line feature class represents a small number of bike lanes around Chapel Hill and Carrboro. It does not extend into the rest of Orange County.

Bike Routes

Filename: `BikeRoutes`
Location: `\PIN_Postpartum.mdb\Routes`
Feature Geometry: Polyline
Number of Features: 4,790
Source: NC DOT GIS, based on source maps provided by the Division of Bicycle and Pedestrian Transportation
Date Created/ Updated: 26 January 2005
Contacts: Michael Schoen at the NCDOT GIS Unit (mlschoen@dot.state.nc.us)
Modified by SAU?: No
Modification:
Metadata Exists?: Yes
Metadata Origin: NCDOT GIS Unit

This line feature class represents official North Carolina bike routes that follow state highways and surface roads. These are not necessarily separate bike lanes, but are routes that are marked with small route signs along the roads. This feature class has been subset to just those routes in the four study counties. There is also a metadata file attached to the feature class, and it can be viewed by clicking on the Metadata tab in ArcCatalog.

Bikeways, Existing, Carrboro

Filename: `CBO_bikewayExisting`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polyline
Number of Features: 120
Source: Town of Carrboro Geographic Information Systems Department http://www.ci.carrboro.nc.us/gis/default.htm

Date Created/ Updated: 5 February 2007
Contacts: Town of Carrboro Geographic Information Systems Department
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains polylines that represent existing bikeways within Carrboro.

Building Footprints, Chatham County

Filename: `Buildings_Chatham`
Location: `\PIN_CountyData.mdb\Chatham_Data`
Feature Geometry: Polygon
Number of Features: 40,116
Source: Chatham County GIS Website
ftp://www.co.chatham.nc.us/TaxMapping/
Date Created/ Updated: 25 February 2005
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the building footprints for all of Chatham County. Date of currency is unknown.

Building Footprints, Durham County

Filename: `Buildings_Durham`
Location: `\PIN_CountyData.mdb\Durham_Data`
Feature Geometry: Polygon
Number of Features: 95,870
Source: Durham County GIS, via Amanda Henley
Date Created/ Updated: 28 July 2006
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: A dissolve was run on the buildings to merge together adjacent polygons representing the same building.
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the building footprints for all of Durham County. Date of currency is unknown.

Building Footprints, Orange County

Filename: `Orange_Building_Footprints`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 70,074
Source: Orange County Land Records/GIS
UNC GIS Librarian, Amanda Henley

Date Created/ Updated: 18 August 2006
Contacts: Patti Smith, GIS Database Administrator, Orange County Land Records/GIS (psmith@co.orange.nc.us, 919-245-2504)
Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: The Carrboro building footprints were more recent than the Orange County footprints. Annie Lux in the Spatial Analysis Unit removed the Carrboro footprints from the Orange County data set and replaced them with the more recent footprints from the Carrboro data set. Then David Bergmark removed polygon overlaps in buildings by dissolving in order to create a single polygon per building.
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains the building footprints for all of Orange County. Date of currency is unknown.

Driveways, Carrboro (Orange County)

Filename: `Driveways_Carrboro`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 3800
Source: UNC GIS Librarian, Amanda Henley
Date Created/ Updated: 19 October 2004
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains polygons of all private driveways in the Town of Carrboro.

Housing & Urban Development (HUD) Subsidized Apartment Parcels, Alamance County

Filename: `Alamance_HUD`
Location: `\PIN_CountyData.mdb\Alamance_Data`
Feature Geometry: Polygon
Number of Features: 17
Source: **Tax Parcels, Alamance County** feature class and information from the HUD Subsidized Apartment Search for Alamance County.
Date Created/ Updated: 1 December 2004
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: The HUD parcels were selected in the **Tax Parcels, Alamance County** feature class, then copied and pasted into the this feature class.
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains 17 Alamance County tax parcels where HUD subsidized apartments are located. The apartment addresses were located using the HUD Subsidized Apartment Search website. Then the parcels were identified in and subset from the **Tax Parcels, Alamance County** feature class. A total of 19 addresses were found in the search, but two of those addresses could not be located in the parcel dataset.

The following parcels were not located:

- ARC/HDS Alamance Co Group Home ICF/MR #1
  713 Town Branch Road, Graham
  Disabled
  No parcel found; geocoded point location is unreliable
- Tanglewood Apartments
  405 S First Street, Mebane
  Family
  No parcel found; geocoded point location may be somewhat accurate

Housing & Urban Development (HUD) Subsidized Apartment Parcels, Chatham County

Filename:	`Chatham_HUD`
Location:	`\PIN_CountyData.mdb\Chatham_Data`
Feature Geometry:	Polygon
Number of Features:	1
Source:	**Tax Parcels, Chatham County** feature class and information from the HUD Subsidized Apartment Search for Chatham County.
Date Created/ Updated:	1 December 2004
Contacts:	Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?:	Yes
Modification:	The HUD parcels were selected in the **Tax Parcels, Chatham County** feature class, then copied and pasted into the this feature class.
Metadata Exists?:	No
Metadata Origin:	

This polygon feature class contains one Chatham County tax parcel where a HUD subsidized apartments is located. The apartment address was located using the HUD Subsidized Apartment Search website. Then the parcel was identified in and subset from the **Tax Parcels, Chatham County** feature class.

Housing & Urban Development (HUD) Subsidized Apartment Parcels, Durham County

Filename:	`Durham_HUD`
Location:	`\PIN_CountyData.mdb\Durham_Data`
Feature Geometry:	Polygon
Number of Features:	15
Source:	**Tax Parcels, Durham County** feature class and information from the HUD Subsidized Apartment Search for Durham County

Date Created/ Updated: 1 December 2004
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: The HUD parcels were selected in the **Tax Parcels, Durham County** feature class, then copied and pasted into the this feature class.
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains 15 Durham County tax parcels where HUD subsidized apartments are located. The apartment addresses were located using the HUD Subsidized Apartment Search website. Then the parcels were identified in and subset from the **Tax Parcels, Durham County** feature class. A total of 17 addresses were found in the search, but two of those addresses could not be located in the parcel dataset.

The following parcels were not located:

- L.W. Reid Homes for the Elderly
  2608 Crest Street, Durham
  Elderly
  No parcel found in GIS data nor on Durham online parcel map; geocoded point may be accurate
- New Bethel Homes for the Elderly
  2614 Crest Street, Durham
  Elderly
  No parcel found in GIS data nor on Durham online parcel map; geocoded point may be accurate

Housing & Urban Development (HUD) Subsidized Apartment Parcels, Orange County

Filename: `Orange_HUD`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 13
Source: **Tax Parcels, Orange County** feature class and information from the HUD Subsidized Apartment Search for Orange County.
Date Created/ Updated: 1 December 2004
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: The HUD parcels were selected in the **Tax Parcels, Orange County** feature class, then copied and pasted into the this feature class.
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains 13 Orange County tax parcels where HUD subsidized apartments are located. The apartment addresses were located using the HUD Subsidized Apartment Search website. Then the parcels were identified in and subset from the **Tax Parcels, Orange County** feature class.

Housing & Urban Development (HUD) Subsidized Apartment Parcels, Wake County

Filename: `Wake_HUD`
Location: `\Miscellaneous_Features.mdb\Wake_Data`
Feature Geometry: Polygon
Number of Features: 24
Source: **Tax Parcels, Wake County** feature class and information from the HUD Subsidized Apartment Search for Wake County.
Date Created/ Updated: 1 December 2004
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: The HUD parcels were selected in the **Tax Parcels, Wake County** feature class, then copied and pasted into the this feature class.
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains 24 Wake County tax parcels where HUD subsidized apartments are located. The apartment addresses were located using the HUD Subsidized Apartment Search website. Then the parcels were identified in and subset from the **Tax Parcels, Wake County** feature class.

Park Access Points

Filename: `Parks_AccessPoints`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Point
Number of Features: 10,289
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 1 May 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains numerous points of access for the 91 parks in the study area. They were created by first exporting out the vertices of all park polygons. Then the vertices for each park were overlaid on aerial photos and compared to features in Google Earth to determine if they were legitimate road access points and/or legitimate walking access points. Any “bad” points were deleted. A point was added to any access location that was not represented by a point. Then the road-only access points were attributed differently than the walking access points.

Parks, Large

Filename: `ParksLarge`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polygon

Number of Features: 9
Source: see **Parks** feature class
Date Created/ Updated: August 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains all parks greater than 0.25 square miles in size. The features were subset from the **Parks** feature class.

Parks, Large, Recreational Opportunities

Filename: `ParksLarge_RecOppAccPts`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Point
Number of Features: 24
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated:
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: see below
Metadata Exists?: No
Metadata Origin:

This feature class is a modification of the **Park Access Points, Road Access** feature class that spatially represents the number of recreational opportunities at each large park. Recreational opportunities were collected as part of the original project data collection for parks (see Appendix VIII). The total number of opportunities was summed for each park (see **Park Recreational Opportunities**), and then evenly distributed among the road access points so that each point would have the same number of opportunities. This value is represented in the attribute field `RecOppsPerPt`.

Parks, Small

Filename: `ParksSmall`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polygon
Number of Features: 82
Source: see **Parks** feature class
Date Created/ Updated: August 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains all parks smaller than 0.25 square miles in size. The features were subset from the **Parks** feature class.

Parks, Small, Recreational Opportunities

Filename: `ParksSmall_RecOppAccPts`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Point
Number of Features: 172
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated:
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: see below
Metadata Exists?: No
Metadata Origin:

This feature class is a modification of the **Park Access Points, Road Access** feature class that spatially represents the number of recreational opportunities at each large park. Recreational opportunities were collected as part of the original project data collection for parks (see Appendix VIII). The total number of opportunities was summed for each park (see **Park Recreational Opportunities**), and then evenly distributed among the road access points so that each point would have the same number of opportunities. This value is represented in the attribute field `RecOppsPerPt`.

Schools, Secondary

Filename: `Schools_Secondary`
Location: `\PIN_Postpartum.mdb\Facilities`
Feature Geometry: Point
Number of Features: 185
Source: Multiple sources, including addresses and county parcel data
Date Created/ Updated: 10 March 2006
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: The locations of 185 public and private secondary schools were placed through a combination of geocoding and visual placement using county parcels and road data as a reference. The location of each geocoded school was compared to the parcel data and hand-corrected if it was incorrect
Metadata Exists?: No
Metadata Origin:

This point feature class contains locations of public and private secondary school in the four-county study area. It was created using a variety of different sources, including visual placement of locations based on address and parcel data.

Schools, Universities and Colleges

Filename: `Schools_UnivCollege`
Location: `\PIN_Postpartum.mdb\Facilities`
Feature Geometry: Polygon
Number of Features: 10
Source: County-level parcel data (Alamance, Chatham, Durham and Orange)
Date Created/ Updated: 10 March 2006
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit

Modified by SAU?: Yes
Modification: The locations of seven public and private colleges and universities in the four study area counties. For each school, all polygon parcels belonging to the school were identified. Those parcel areas that likely contained recreational opportunities were kept and the polygons were copied to this feature class.
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains polygons belonging to seven universities and colleges (four of the features are for UNC-Chapel Hill) in the four-county study area. It was created by first identifying all polygon parcels belonging to each school in the county-level parcel datasets, and then selecting only those that likely contain recreational opportunities.

Sidewalks, Carrboro

Filename: `CBO_sidewalkExisting`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polyline
Number of Features: 218
Source: Town of Carrboro Geographic Information Systems Department
http://www.ci.carrboro.nc.us/gis/default.htm
Date Created/ Updated: 5 February 2007
Contacts: Town of Carrboro Geographic Information Systems Department
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains features representing existing sidewalks for the Town of Carrboro.

Supermarkets

Filename: `Supermarkets`
Location: `\PIN_Postpartum.mdb\Facilities`
Feature Geometry: Point
Number of Features: 77
Source: ReferenceUSA and Yellow Pages
Date Created/ Updated: 8 August 2005
Contacts: Barbara Laraia (LaraiaB@chc.ucsf.edu), Univ. of California, San Francisco
Modified by SAU?: Yes
Modification: Six supermarkets were geocoded in the SAU. They were added to the other supermarket locations, and then the positional accuracy was checked using Google Maps and local knowledge. Their locations were hand-corrected when necessary.
Metadata Exists?: No
Metadata Origin:

This point feature class contains supermarket locations in the PIN Postpartum study area. The addresses and/or latitude/longitude coordinates were obtained using a

combination of ReferenceUSA, Yellow Pages, and local knowledge. The locations were accuracy assessed using Google Maps, company websites, and local searches. Relevant information fields contained in the attribute table include number of employees, amount of sales, and square footage of the store.

See the Supermarkets entry in Appendix IX for a description of the attribute variables.

Tiendas

Filename: `Tiendas`
Location: `\PIN_Postpartum.mdb\Facilities`
Feature Geometry: Point
Number of Features: 37
Source: ReferenceUSA and Yellow Pages
Date Created/ Updated: 22 November 2005
Contacts: Barbara Laraia (LaraiaB@chc.ucsf.edu), Univ. of California, San Francisco
Modified by SAU?: Yes
Modification: Six tiendas were geocoded in the SAU. They were added to the other tienda locations. Their locations were hand-corrected when necessary.
Metadata Exists?: No
Metadata Origin:

This point feature class contains tienda locations in Alamance, Durham and Orange counties. The addresses and/or latitude/longitude coordinates were obtained using a combination of ReferenceUSA and Yellow Pages. Relevant information fields contained in the attribute table include number of employees, amount of sales, and square footage of the store.

Study Participants

This category contains data related to participant locations.

PIN3 Geocoded Source Data

Filename: `PIN3_GDT_AllParticipants_SP`
Location: `\Miscellaneous_Features.mdb\Full_Respondents`
Feature Geometry: Point
Number of Features: 1,923
Source: GDT (now TeleAtlas - http://www.teleatlas.com)
Date Created/ Updated: June 2005
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This point feature class contains geocoded locations of PIN3 participants. These locations were geocoded by GDT from the original PIN3 addresses (*n* = 2,006). Some of these locations fall outside of our study area.

PinPost GPS Source Data

Filename: `All_GPS_Unique_Clean`
Location: `\Miscellaneous_Features.mdb\Full_Respondents`
Feature Geometry: Point
Number of Features: 665
Source: PinPost field teams; collected with Garmin 12XL GPS receivers
Date Created/ Updated: 15 February 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This point feature class contains locations of PinPost participants collected with Garmin 12XL GPS receivers by PinPost field interviewers at respondents' homes.

PinPost Participant Eighth-Mile Euclidean Neighborhoods

Filename: `PinPost_Participants_Euc8thM`
Location: `\PIN_Postpartum.mdb\Women`
Feature Geometry: Polygon
Number of Features: 2,444
Source: PIN Project
Date Created/ Updated: 1 June 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains eighth-mile Euclidean buffer neighborhood polygons around each of the locations in the **PinPost Participant Locations** feature class.

PinPost Participant Eighth-Mile Network Neighborhoods

Filename: `PinPost_NetSvcAreas_8thM`
Location: `\Roads.mdb\NetServiceAreas`
Feature Geometry: Polygon
Number of Features: 2,444
Source: PIN Project
Date Created/ Updated: 1 June 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class contains eighth-mile network service area neighborhood polygons around each of the locations in the **PinPost Participant Locations** feature class.

PinPost Participant Land Use Join

Filename: `PinPost_Participants_LandUseJoin`
Location: `\PIN_Postpartum.mdb\Women`
Feature Geometry: Point
Number of Features: 1,111
Source: PIN Project
Date Created/ Updated: 1 June 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This point feature class contains the **PinPost Participant Locations, Within ¼ Mile of Chapel Hill-Durham Land Use Boundary** locations with their land use attached. A spatial join was performed between these locations and the **Land Use Parcels, Chapel Hill and Durham** feature class, and the associated land use is the land use on the parcel in which the participant's location lies.

Topography

This category contains any datasets related to elevation and other topographic features (e.g. slope, aspect, etc.).

Digital Elevation Model, 100' Resolution

Filename: `pindem_100ft`
Location: `\Raster\Topography`
Feature Geometry: Raster
Size (row x col): 2675 x 2543
Cell Resolution: 100 feet
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 13 August 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This raster digital elevation model was created in ArcInfo using the **TOPOGRID** command. It was interpolated from the **Elevation Contours, 10 Foot (5 Counties)**

feature class. Each raster cell, which has a spatial resolution of 100 feet, contains a value which represents the elevation of the cell in feet.

Elevation Contours, 2 Foot (5 Counties)

Filename: `ElevContours_2Foot_5Counties`
Location: `\Topography_BaseData.mdb`
Feature Geometry: Polyline
Number of Features: 296,616
Source: NCDOT GIS Branch
http://www.ncdot.org/planning/statewide/gis/
Date Created/ Updated: 6 January 2005
Contacts: NCDOT GIS Branch
Modified by SAU?: Yes
Modification: Contours were downloaded for each county individually. The five files were appended together, but the contours were not edge-matched.
Metadata Exists?: Yes
Metadata Origin: NCDOT

This line feature class contains elevation contours at 2-foot intervals for the four study counties, plus Wake County. It was acquired from the North Carolina Department of Transportation website in January of 2005. A metadata file does exist for this dataset, and it is viewable using the Metadata tab in ArcCatalog.

Elevation Contours, 10 Foot (5 Counties)

`ElevContours_10Foot_5Counties`
`\Topography_BaseData.mdb`

Filename: `ElevContours_10Foot_5Counties`
Location: `\Topography_BaseData.mdb`
Feature Geometry: Polyline
Number of Features: 59,250
Source: NCDOT GIS Branch
http://www.ncdot.org/planning/statewide/gis/
Date Created/ Updated: 6 January 2005
Contacts: NCDOT GIS Branch
Modified by SAU?: Yes
Modification: The 10-foot contours were extracted from the **Elevation Contours, 2 Foot (5 Counties)** feature class.
Metadata Exists?: Yes
Metadata Origin: NCDOT

This line feature class contains elevation contours at 10-foot intervals for the four study counties, plus Wake County. It was created from the **Elevation Contours, 2 Foot (5 Counties)** feature class by subsetting out the 10-foot contours. A metadata file does exist for this dataset, and it is viewable using the Metadata tab in ArcCatalog.

Elevation Contour Subset Tiles – Count 4

Filename: `ContourTiles4`
Location: `\Topography_BaseData.mdb`

Feature Geometry: Polygon
Number of Features: 4
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 2 February 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class splits the study area into four equal-area tiles that can be used to subset the elevation contours to expedite DEM creation.

Elevation Contour Subset Tiles – Count 9

Filename: `ContourTiles9`
Location: `\Topography_BaseData.mdb`
Feature Geometry: Polygon
Number of Features: 9
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 2 February 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class splits the study area into nine equal-area tiles that can be used to subset the elevation contours to expedite DEM creation.

Elevation Contour Subset Tiles – Count 36

Filename: `ContourTiles36`
Location: `\Topography_BaseData.mdb`
Feature Geometry: Polygon
Number of Features: 36
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 2 February 2007
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This polygon feature class splits the study area into thirty-six equal-area tiles that can be used to subset the elevation contours to expedite DEM creation.

Slope, Polygons, 15%-25%, Carrboro

Filename: `CBO_15_25Slope`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polygon

Number of Features: 13,353
Source: Town of Carrboro Geographic Information Systems Department
http://www.ci.carrboro.nc.us/gis/default.htm
Date Created/ Updated: 27 April 2006
Contacts: Town of Carrboro Geographic Information Systems Department
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains polygons representing areas within the Town of Carrboro where the slope of the ground is between 15% and 25%.

Slope, Polygons, >25%, Carrboro

Filename: `CBO_25Slope`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polygon
Number of Features: 2,754
Source: Town of Carrboro Geographic Information Systems Department
http://www.ci.carrboro.nc.us/gis/default.htm
Date Created/ Updated: 27 April 2006
Contacts: Town of Carrboro Geographic Information Systems Department
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains polygons representing areas within the Town of Carrboro where the slope of the ground is greater than 25%.

Transportation (Roads)

This category contains datasets related to roads.

100' Road Sections

Filename: `Roads_Detailed_Segs100Ft`
Location: `\Roads_100ftSegs.mdb`
Feature Geometry: Polyline
Number of Features: 398,186
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 23 January 2008
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: Study road segments split into sections of no more than 100 feet in length.
Metadata Exists?: No
Metadata Origin:

This feature class contains sections of road segments of no more than 100 feet in length. It was created using a combination of ArcGIS 9.1 and ArcView 3.3. The first step was the creation of points every 100 feet along all road features in the **Detailed Roads (County-Level), Study Area** feature class. Then those points and the road segments were exported to shapefiles and brought in to ArcView 3.3. An Avenue script called Polyline Chopper was downloaded from the ESRI Arcscripts website (http://arcscripts.esri.com/details.asp?dbid=13375) and was used to split the road segments at every point.
This dataset was created for the purpose of extracting terrain slope values every 100 feet along the road and using those values in the creation of certain constructed variables (see the **Hilliness** derived datasets).

100' Road Section Midpoints

Filename: `Roads_Detailed_Segs100Ft_Centroids`
Location: `\Roads_100ftSegs.mdb`
Feature Geometry: Polyline
Number of Features: 398,186
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 23 January 2008
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: Created centroids of **100' Road Sections**.
Metadata Exists?: No
Metadata Origin:

This feature class contains midpoints of the road segment sections in the **100' Road Sections** feature class. The midpoints were created in ArcGIS using the **Feature To Point** tool and constraining the output so points always fall on the source line feature. This dataset was created for the purpose of extracting terrain slope values every 100 feet along the road and using those values in the creation of certain constructed variables (see the **Hilliness** derived datasets).

100' Road Section Midpoints with Slope Values, Null Values Included

Filename: `Roads_Detailed_SlopeVals_wNullVals`
Location: `\Roads_100ftSegs.mdb`
Feature Geometry: Polyline
Number of Features: 398,186
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 23 January 2008
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: Yes
Modification: see below
Metadata Exists?: No
Metadata Origin:

This point feature class contains the midpoints of the features **100' Road Sections** dataset, with slope values assigned to each midpoint. The dataset was created by

overlaying the midpoints of the **100' Road Section Midpoints** dataset on the **Slope** raster and extracting the values using the **Extract Values to Points** tool in ArcMap. Some of the points fell outside the study area, meaning that they did not overlay any data cells in the **Slope** raster, so they were assigned Null values to the slope attribute field.

Cul-de-Sacs, Study Area

Filename: `CulDeSacs`
Location: `\Roads.mdb\Road_Data`
Feature Geometry: Polyline
Number of Features: 113
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 26 February 2008
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains the cul-de-sac road segments from the **Detailed Roads (County-Level), Study Area** feature class. Those segments are attributed as `Class` 'CDS'.

Dead End Roads, Study Area

Filename: `DeadEndRoads`
Location: `\Roads.mdb\Road_Data`
Feature Geometry: Polyline
Number of Features: 11,036
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 22 February 2008
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains the all road segments from the **Detailed Roads (County-Level), Study Area** feature class that are dead ends. Those segments include cul-de-sac looped segments, segments adjacent to cul-de-sacs, and any roads that intersect one intersection node with an `IntCount` value of 1 (see **Intersections from Detailed Roads (County-Level), Study Area**).

Detailed Roads, Midpoints

Filename: `Roads_Detailed_Midpoints`
Location: `\Roads.mdb\Road_Data`
Feature Geometry: Polyline
Number of Features: 41,678
Source: Spatial Analysis Unit, Carolina Population Center

Date Created/ Updated: 22 April 2008
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains the midpoints of all road segments in the **Detailed Roads (County-Level), Study Area** feature class. The midpoints were created in ArcGIS using the **Feature To Point** tool and constraining the output so points always fall on the source line feature.

Detailed Roads, Network Dataset

Filename: `Road_Data_ND`
Location: `\Roads.mdb\Road_Data`
Feature Geometry: Network Dataset
Number of Features: N/A
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 22 April 2008
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This network dataset was created from the **Detailed Roads (County-Level), Study Area** feature class using the ArcGIS Network Analyst extension. It was created to facilitate network analyses, including the creation of the network service area neighborhoods around the participant locations. This file was created along with and is linked to the **Detailed Roads, Network Dataset, Junctions** feature class.

Detailed Roads, Network Dataset, Junctions

Filename: `Road_Data_ND_Junctions`
Location: `\Roads.mdb\Road_Data`
Feature Geometry: Point
Number of Features: 33,834
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 22 April 2008
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This network dataset was created along with the **Detailed Roads, Network Dataset** from the **Detailed Roads (County-Level), Study Area** feature class using the ArcGIS Network Analyst extension. The features represent all locations where two or more road segments intersect.

Major Roads, Study Area

Filename: `Roads_Detailed_Major`
Location: `\Roads.mdb\Road_Data`
Feature Geometry: Polyline
Number of Features: 3,163
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 22 April 2008
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains all major roads, which are defined as Interstates, US Highways, and State Highways. This definition was created for the constructed variables that focus on major roads (**Distance to the Nearest Major Road** and **Major Road Density**). The features for these three road types (Class types of 'I', 'UH', and 'SHR') were subset from the **Detailed Roads (County-Level), Study Area** feature class.

Nodes, Interstates

Filename: `Nodes_Interstates`
Location: `\Roads.mdb\Road_Data`
Feature Geometry: Point
Number of Features: 347
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 22 April 2008
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains all nodes, or intersections, that fall on an Interstate segment in the **Detailed Roads (County-Level), Study Area** feature class.

Nodes, Major Roads

Filename: `Nodes_MajorRoads`
Location: `\Roads.mdb\Road_Data`
Feature Geometry: Point
Number of Features: 3,058
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 22 April 2008
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains all nodes, or intersections, that fall on a major road segment (i.e. Interstates, US Highways, or State Highways) in the **Detailed Roads (County-Level), Study Area** feature class.

Roads, Alamance

Filename: `Roads_Alamance`
Location: `\PIN_CountyData.mdb\Alamance_Data`
Feature Geometry: Polyline
Number of Features: 11,112
Source: Alamance County GIS website http://www.alamance-nc.com/gis/
Date Created/ Updated: 8 December 2004
Contacts: Alamance County GIS department
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains the road centerlines for Alamance County. It has quite a few geographic and attribute errors in it.

Roads, Chatham

Filename: `Roads_Chatham`
Location: `\PIN_CountyData.mdb\Chatham_Data`
Feature Geometry: Polyline
Number of Features: 8,654
Source: NCDOT
Date Created/ Updated: 5 January 2005
Contacts: NCDOT
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class was obtained from the North Carolina Department of Transportation. It contains the road centerlines for Chatham County. There were 2 or 3 different versions of road files available from the Chatham County GIS, but compared to the NCDOT data, they were considered to be too incomplete.

Roads, Durham

Filename: `Roads_Durham`
Location: `\PIN_CountyData.mdb\Durham_Data`
Feature Geometry: Polyline
Number of Features: 14,618
Source: UNC GIS database on AFS (\afs\isis.unc.edu\data\gis\local\durham)
Date Created/ Updated: 8 December 2004
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No

Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains the road centerlines for Durham County. It was produced by the Durham County GIS Department.

Roads, North Carolina, Detailed (TIGER/Line)

Filename: `Roads_NC`
Location: `\Miscellaneous_Features.mdb\NC_Features_NAD83_StatePlane_Ft`
Feature Geometry: Polyline
Number of Features: 1,095,853
Source: NC General Assembly Redistricting Data website
http://www.ncleg.net/redistricting/Data/Data.html
Date Created/ Updated: 12 October 2004
Contacts: NC General Assembly Redistricting Data website
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This road file contains detailed roads of North Carolina. The dataset was originally created from the UA Census 2000 TIGER/Line Files.

Roads, Orange

Filename: `Roads_Orange`
Location: `\PIN_CountyData.mdb\Orange_Data`
Feature Geometry: Polyline
Number of Features: 8,039
Source: UNC GIS database on AFS (\afs\isis.unc.edu\data\gis\local\orange)
Date Created/ Updated: 8 December 2004
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains the road centerlines for Orange County. It was produced by the Orange County GIS Department.

Roads, Study Area, Detailed (TIGER/Line)

Filename: `Roads_PPP`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polyline
Number of Features: 126,030
Source: NC General Assembly Redistricting Data website
http://www.ncleg.net/redistricting/Data/Data.html
Date Created/ Updated: 12 October 2004
Contacts: NC General Assembly Redistricting Data website

Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This line feature class contains detailed roads for the four counties in the PIN Postpartum study. The dataset was subset from the **Roads, North Carolina, Detailed (TIGER/Line)** feature class.

We did not use this file in any analysis because after comparing it with the road files from the individual counties, we determined that it was older than the county files and was therefore missing many newer roads on which our subjects lived.

Roads, Wake

Filename: `Roads_Wake`
Location: `\Miscellaneous_Features.mdb\Wake_Data`
Feature Geometry: Polyline
Number of Features: 45,745
Source: Wake County GIS website
http://www.wakegov.com/county/propertyandmapping/gisdigitaldata.htm
Date Created/ Updated: 19 October 2004
Contacts: Wake County GIS website
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains the road centerlines for Wake County.

Topology, Detailed Roads

Filename: `Road_Topology`
Location: `\Roads.mdb\Road_Data`
Feature Geometry: Topology
Number of Features: N/A
Source: Spatial Analysis Unit, Carolina Population Center
Date Created/ Updated: 22 April 2008
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This topology dataset is linked to the **Detailed Roads (County-Level), Study Area** feature class and is used to identify topological errors in the dataset any time a spatial edit is performed.

Transportation (Other)

This category contains datasets related to all transportation features other than roads.

Bus Routes, Chapel Hill Transit, Weekday

Filename: `CHT_Weekday_Routes`
Location: `\PIN_Postpartum.mdb\Postpartum_Region\Routes`
Feature Geometry: Polyline
Number of Features: 1,749
Source: Town of Chapel Hill Transportation Planning Department
Date Created/ Updated: 27 January 2005
Contacts: Jennifer Lewis, Planning Intern (pli1@townofchapelhill.org, 919-968-2888 x 355)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

The Chapel Hill Transit route data was obtained from the Town of Chapel Hill Transportation Planning Department. It is a feature class that contains the many different routes that CHT runs during the week.

Bus Routes, Chapel Hill Transit, Weekend

Filename: `CHT_Weekend_Routes`
Location: `\PIN_Postpartum.mdb\Postpartum_Region\Routes`
Feature Geometry: Polyline
Number of Features: 587
Source: Town of Chapel Hill Transportation Planning Department
Date Created/ Updated: 27 January 2005
Contacts: Jennifer Lewis, Planning Intern (pli1@townofchapelhill.org, 919-968-2888 x 355)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

The Chapel Hill Transit route data was obtained from the Town of Chapel Hill Transportation Planning Department. It is a feature class that contains the many different routes that CHT runs during the weekend.

Bus Routes, Durham Area Transit Authority (DATA)

Filename: `DATA_Bus_Routes`
Location: `\PIN_Postpartum.mdb\Postpartum_Region\Routes`
Feature Geometry: Polyline
Number of Features: 15
Source: UNC GIS database on AFS (\afs\isis.unc.edu\data\gis\local\durham)
Date Created/ Updated: 12 August 2005
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

The Durham Area Transit Authority route data was obtained from the UNC GIS data repository. It is a feature class that contains line segments that make up the DATA routes.

Bus Routes, Triangle Transit Authority (TTA)

Filename: `TTA_Bus_Routes`
Location: `\PIN_Postpartum.mdb\Postpartum_Region\Routes`
Feature Geometry: Polyline
Number of Features: 1,348
Source:
Date Created/ Updated: 27 May 2005
Contacts:
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

The Triangle Transit Authority route data is a feature class that contains line segments that make up the TTA routes. The source and other details are currently unknown.

Bus Stops, Chapel Hill Transit

Filename: `CHT_Bus_Stops`
Location: `\PIN_Postpartum.mdb\Postpartum_Region\Routes`
Feature Geometry: Point
Number of Features: 606
Source: Town of Chapel Hill Transportation Planning Department
Date Created/ Updated: 27 January 2005
Contacts: Jennifer Lewis, Planning Intern (pli1@townofchapelhill.org, 919-968-2888 x 355)
Modified by SAU?: No
Modification:
Metadata Exists?: Yes, but very poor
Metadata Origin: Town of Chapel Hill Transportation Planning Department

The Chapel Hill Transit bus stop data was obtained from the Town of Chapel Hill Transportation Planning Department. It is a feature class that contains point locations of the bus stops along all CHT routes. Each stop is attributed by the route or routes that it lays along, the facilities at the stop, and many other features.

Bus Stops, Durham Area Transit Authority (DATA)

Filename: `DATA_Bus_Stops`
Location: `\PIN_Postpartum.mdb\Postpartum_Region\Routes`
Feature Geometry: Point
Number of Features: 1,046
Source: UNC GIS database on AFS (\afs\isis.unc.edu\data\gis\local\durham)
Date Created/ Updated: 12 August 2005
Contacts: Amanda Henley, UNC GIS Librarian (ahenley@refstaff.lib.unc.edu)
Modified by SAU?: No
Modification:

Metadata Exists?: No
Metadata Origin:

The Durham Area Transit Authority bus stop data was obtained from the UNC GIS data repository. It is a feature class that contains point locations of the bus stops along all DATA routes. Each stop is attributed by, among other things, the stop name and whether or not there is a shelter present.

Bus Stops, Triangle Transit Authority (TTA)

Filename: `TTA_Bus_Stops`
Location: `\PIN_Postpartum.mdb\Postpartum_Region\Routes`
Feature Geometry: Point
Number of Features: 647
Source:
Date Created/ Updated: 27 May 2005
Contacts:
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

The Triangle Transit Authority bus stop data is a feature class that contains point locations that make up the TTA stops. The source and other details are currently unknown.

Railroads, North Carolina (TIGER/Line)

Filename: `Railroads_NC`
Location: `\Miscellaneous_Features.mdb\NC_Features_NAD83_StatePlane_Ft`
Feature Geometry: Polyline
Number of Features: 19,038
Source: NC General Assembly Redistricting Data website
http://www.ncleg.net/redistricting/Data/Data.html
Date Created/ Updated: 12 October 2004
Contacts: NC General Assembly Redistricting Data website
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This feature class contains railroad tracks in North Carolina. The dataset was originally created from the UA Census 2000 TIGER/Line Files.

Railroads, PinPost (NCDOT)

Filename: `Railroads_PPP_NCDOT`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polyline
Number of Features: 1,061
Source: NC Department of Transportation website
http://www.ncdot.org/planning/tpb/gis/DataDist/DataDist.html

Date Created/ Updated: 6 January 2005
Contacts: NC Department of Transportation
Modified by SAU?: Yes
Modification: The railroad shapefiles for each of the five counties were merged together and imported into the geodatabase.
Metadata Exists?: No
Metadata Origin:

This feature class contains the railroad tracks in the four counties in the PIN Postpartum study. The dataset was obtained from the North Carolina Department of Transportation website. The files were downloaded as county-level shapefiles. They were appended together, exported to a Geodatabase feature class, and then the adjacent arcs were snapped together to complete the connectivity.

Railroads, PinPost (TIGER/Line)

Filename: `Railroads_PPP`
Location: `\PIN_Postpartum.mdb\Postpartum_Region`
Feature Geometry: Polyline
Number of Features: 1,407
Source: NC General Assembly Redistricting Data website http://www.ncleg.net/redistricting/Data/Data.html
Date Created/ Updated: 12 October 2004
Contacts: NC General Assembly Redistricting Data website
Modified by SAU?: No
Modification:
Metadata Exists?: No
Metadata Origin:

This line feature class contains the railroad tracks in the four counties in the PIN Postpartum study. The dataset was subset from the **Railroads, North Carolina (TIGER/Line)** feature class.

Various Geodatabase Tables

This category contains descriptions of all geodatabase tables that are not listed elsewhere in association with feature classes.

Audit Segments Combined with Others

Filename: `Audit_Combined_IDs`
Location: `\PIN_Postpartum.mdb`
Number of Records: 653
Source: Spatial Analysis Unit, Carolina Population Center
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit

This table contains two attribute fields with information on road segments that were combined with other segments during the audit, and for which the AuditID attributes

were changed. The first field, ORIGID, contains the original AuditIDs for the segment. The second field, COMBINED, contains the AuditID for the segment with which the segment was combined, and this is also the new AuditID for that particular segment.

Block Group – County List

Filename: BG_Cnty_List
Location: \PIN_Postpartum.mdb
Number of Records: 312
Source: Spatial Analysis Unit, Carolina Population Center
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit

This table contains all block group FIPS codes in the study area listed next to the county in which they lie.

Block Group List

Filename: BG_List
Location: \PIN_Postpartum.mdb
Number of Records: 312
Source: Spatial Analysis Unit, Carolina Population Center
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit

This table contains all block group FIPS codes in the study area.

Census Feature Class Codes (CFCC)

Filename: CFCC_Codes
Location: \PIN_Postpartum.mdb
Number of Records: 191
Source: Spatial Analysis Unit, Carolina Population Center
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit

This table contains all Census Feature Class Codes (CFCC) from the U.S. Census Bureau website.

Hispanic Percentage, by Census Tract

Filename: Hispanic_Percent_Tract
Location: \PIN_Postpartum.mdb
Number of Records: 280
Source: Spatial Analysis Unit, Carolina Population Center
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit

This table very likely came from Barbara Laraia. There is a field called hisp_cat that ranges from 0 to 2.

Inter-Rater Reliability Road Segments, 2005 Audit

Filename: IRR2005_RoadSegments
Location: \Roads.mdb
Number of Records: 471

Source: Spatial Analysis Unit, Carolina Population Center
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit

This table contains a list of road segment AuditID identifiers for the road segments that were used in the inter-rater reliability during the 2005 audit.

Inter-Rater Reliability Road Segments, 2006 Audit

Filename: `IRR2006_RoadSegments`
Location: `\Roads.mdb`
Number of Records: 477
Source: Spatial Analysis Unit, Carolina Population Center
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit

This table contains a list of road segment AuditID identifiers for the road segments that were used in the inter-rater reliability during the 2006 audit.

Map Production Order, 2006 Audit

Filename: `Audit2006_MapOrder`
Location: `\PIN_Postpartum.mdb`
Number of Records: 248
Source: Spatial Analysis Unit, Carolina Population Center
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit

This table contains the order in which the 2006 audit maps were created. It was used during map creation to prioritize development.

Park Recreational Opportunities

Filename: `ParkRecOpps`
Location: `\PIN_Postpartum.mdb`
Number of Records: 91
Source: Spatial Analysis Unit, Carolina Population Center
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit

This table contains the list of all recreational opportunities for the **Parks** feature class. It was used in the development of the **Parks, Large, Recreational Opportunities** and **Parks, Small, Recreational Opportunities** feature classes.

PinPost Participant Neighborhood Areas

Filename: `Areas_Respondent_Neighborhoods`
Location: `\PIN_Postpartum.mdb`
Number of Records: 2,444
Source: Spatial Analysis Unit, Carolina Population Center
Contacts: Brian Frizzelle (bgf@email.unc.edu), CPC Spatial Analysis Unit

This table contains the area for all four neighborhood types (¼-mile Euclidean, ¼-mile network, 1-mile Euclidean, and 1-mile network) for every participant location.

IV. Derived Datasets of Constructed Variables

This section contains descriptions of tabular datasets derived using spatial analytical techniques. The descriptions in here are only for the datasets themselves. For a detailed list of all constructed variables, see Appendix II.

Any dataset that deals with area was generated for four different neighborhood types: ¼-mile Euclidean buffer, 1-mile Euclidean buffer, ¼-mile network service area, and a 1-mile network service area. So any reference to "neighborhoods" or "each neighborhood" indicates these four practical definitions of a respondent's immediate surroundings.

The dataset descriptions below are organized by category.

DENSITY

Gross Population Density (Population over Non-Water Areas)

Processing Env.:	Python, Geoprocessor	
Scripts:	PinPost_Measures_Density_GrossPopDensity_Euc.py PinPost_Measures_Density_GrossPopDensity_Net.py	
Input Datasets:	PinPost Participant Quarter-Mile Euclidean Neighborhoods PinPost Participant One-Mile Euclidean Neighborhoods PinPost Participant Quarter-Mile Network Neighborhoods PinPost Participant One-Mile Network Neighborhoods Census Blocks (2000) for Study Area Hydrography, Study Area	
Concept:	Gross Population Density is simply the number of people per square mile over non-water area within the area of the neighborhood.	
Basic Formula:	Persons in housing units / (area of neighborhood – area of water)	
Output Units:	persons per square mile	
Num. of Datasets:	4	(one for each neighborhood type)
Num. of Records:	2444	(data for all respondent locations)
Num. of Variables:	4 per dataset	(UniqueID plus derived data)

Notes:

Population counts were taken from the 2000 census block data. Water features (in the hydrography dataset) were erased from the blocks, leaving only non-water areas present. Then the non-water blocks were intersected with each of the respondent neighborhood polygons. Any blocks split by the neighborhood polygon boundary had their population apportioned according to the percentage of land area falling inside and outside the neighborhood polygon. The populations within the intersected block polygons were summed by respondent ID and divided by the summed non-water area

of all intersected blocks within the neighborhood polygon to derive the gross population density variable.

In addition to the density variable, the summed population (numerator) and the summed non-water area (denominator) for each neighborhood type were also reported in the dataset.

Population over Area in Residential Parcels

Processing Env.:	Python, Geoprocessor	
Scripts:	PinPost_Measures_Density_PopDensResParcels_Euc.py PinPost_Measures_Density_PopDensResParcels_Net.py	
Input Datasets:	PinPost Participant Quarter-Mile Euclidean Neighborhoods, Chapel Hill and Durham Only PinPost Participant One-Mile Euclidean Neighborhoods, Chapel Hill and Durham Only PinPost Participant Quarter-Mile Network Neighborhoods, Chapel Hill and Durham Only PinPost Participant One-Mile Network Neighborhoods, Chapel Hill and Durham Only Land Use Parcels, Residential, for Chapel Hill and Durham County Census Blocks (2000) for Study Area Hydrography, Study Area	
Concept:	Population over Area in Residential Parcels is the number of people per square mile over the area of residential parcels, excluding water, within the area of the neighborhood.	
Basic Formula:	Persons in housing units / (area of parcels in neighborhood – area of water)	
Output Units:	persons per square mile	
Num. of Datasets:	4	(one for each neighborhood type)
Num. of Records:	1111 847	(¼-mile neighborhood datasets) (1-mile neighborhood datasets)
Num. of Variables:	4 per dataset	(UniqueID plus derived data)
Notes:	Land use data at the parcel level is only available for Chapel Hill and Durham County, so this dataset was only created for respondents living in those areas. In order to avoid having any neighborhoods cross outside of this subset area, we only used the ¼-mile neighborhoods for respondents living more than ¼ mile from the subset boundary (*n*=1111), and we only used the 1-mile neighborhoods for respondents living more than 1 mile from the subset boundary (*n*=847).	

Population counts were taken from the 2000 census block data. Parcel data were obtained from the County of Durham and the Town of Chapel Hill. Preparation of the dataset included edge-matching of the polygons, normalizing the attribute fields and land use categories, and merging the two together to form a single spatial dataset. The residential parcels were extracted and intersected with the census blocks. Water features (in the hydrography dataset) were erased from the intersected parcel-blocks,

leaving only non-water areas present. Then the block populations were apportioned throughout the parcels according to the percentage of the remaining non-water block area comprised by each.

This modified non-water parcel-block dataset was then intersected with each of the respondent neighborhood polygons. Any parcel-blocks split by the neighborhood polygon boundary had their population further apportioned according to the percentage of land area falling inside and outside the neighborhood polygon. The populations within the intersected parcel-block-neighborhood polygons were summed by respondent ID and divided by the summed non-water area of all intersected parcel-blocks within the neighborhood polygon to derive the population over area in residential parcels variable.

In addition to the density variable, the summed population (numerator) and the summed non-water area (denominator) for each neighborhood type were also reported in the dataset.

HILLINESS

Percent of 100-Foot Road Segments within Neighborhoods with a Slope > Abs (3%), > Abs (5%), and > Abs (8%)

Processing Env.:	ArcView 3.3, ArcGIS 9.1, Python, Geoprocessor	
Scripts:	PinPost_Measures_Hilliness_SlopeSegments_Euc.py PinPost_Measures_Hilliness_SlopeSegments_Net.py	
Input Datasets:	PinPost Participant Quarter-Mile Euclidean Neighborhoods PinPost Participant One-Mile Euclidean Neighborhoods PinPost Participant Quarter-Mile Network Neighborhoods PinPost Participant One-Mile Network Neighborhoods Detailed Roads (County-Level), Study Area Slope 100' Road Section Midpoints with Slope Values	
Concept:	Each road segment is divided into 100' sections, and the slope of that section is extracted from a slope dataset. The percentage of length of all segments with slope greater than the specified values is then calculated for each neighborhood.	
Basic Formula:	Length of 100' sections with slope > x% / total length of all 100' road sections in the neighborhood	
Output Units:	percentage	
Num. of Datasets:	4	(one for each neighborhood type)
Num. of Records:	2444	(data for all respondent locations)
Num. of Variables:	12 per dataset	(UniqueID plus derived data)
Notes:	The act of splitting segments into 100' sections results in some sections being less than 100' in length. Because of this, it was decided to calculate the	

percentages using lengths rather than raw counts in order to more accurately represent the proportion of the segments with steeper slopes.

A significant amount of pre-processing had to be done for this dataset. The first step was to split the road segments into 100' sections. The **Convert Paths to Points** tool in the Hawth's Tools 3.12 ArcGIS extension (http://www.spatialecology.com/htools/tooldesc.php) was used to create a dataset of points every 100 feet along every road segment. The roads and the 100' points were exported to shapefiles and brought in to ArcView 3.3. An Avenue script, FM.ChopPolyline.ave, written by Simon Lee and Domenico Ciavarella and acquired from the ESRI Arcscripts website (http://arcscripts.esri.com/details.asp?dbid=13376), was used to split the road segments at every point location. The resultant sectioned road data were imported back into a geodatabase feature class. Then in ArcMap, centroids of the 100' road section were generated and overlaid on a slope dataset, which was derived from the 30-meter resolution Shuttle Radar Topography Mission (SRTM) digital elevation model. The **Extract Values to Points** tool in the ArcGIS Spatial Analyst extension was used to assign each point its corresponding slope value. These will be referred to as road-slope points, and in addition to the slope value, each one retains all attributes from its parent road section, including length.

The road slope points were intersected with each of the neighborhood datasets, and the lengths for all points were summed by respondent. For points with slopes greater than 3%, 5% and 8%, their counts were recorded and their lengths were summed by respondent. Then the percentages were calculated for each respondent for each of the three slope thresholds.

Additional variables for each respondent were reported in the dataset besides the percentages. These include the total count and length of all 100' sections in the neighborhood, the count and length of all sections with a slope > 3%, the count and length of all sections with a slope > 5%, and the count and length of all sections with a slope > 8%.

Percent of Each Road Segment with a Slope > Abs (3%), > Abs (5%), and > Abs (8%), Based on 100-Foot Road Segments

Processing Env.:	ArcView 3.3, ArcGIS 9.1, Python, Geoprocessor
Scripts:	PinPost_Measures_Hilliness_SlopesByAuditID.py
Input Datasets:	Detailed Roads (County-Level), Study Area Slope 100' Road Section Midpoints with Slope Values
Concept:	Each road segment is divided into 100' sections, and the slope of that section is extracted from a slope dataset. For each original segment, the percentage of length of its 100' sections with slope greater than the specified values is calculated.
Basic Formula:	Length of 100' sections with slope > x% / total length of all 100' road sections in the segment

Output Units:	percentage	
Num. of Datasets:	1	
Num. of Records:	40,547	(data for all unique AuditIDs)
Num. of Variables:	8	(AuditID plus derived data)
Notes:	The act of splitting segments into 100' sections results in some sections being less than 100' in length. Because of this, it was decided to calculate the percentages using lengths rather than raw counts in order to more accurately represent the proportion of the segments with steeper slopes.	

A significant amount of pre-processing had to be done for this dataset. See the above dataset **Percent of 100-Foot Road Segments within Neighborhoods with a Slope > Abs (3%), > Abs (5%), and > Abs (8%)** for a complete description of those steps.

For each AuditID, the counts of all 100' sections with slopes greater than 3%, 5% and 8% were recorded, and their lengths were summed for each of those thresholds. Then the summed threshold lengths were divided by the summed length of all 100' sections with the same AuditID to derive the percentages.

Additional variables for each AuditID were reported in the dataset besides the percentages. These include the total count and length of all 100' sections in the AuditID and the summed length of all sections with slopes > 3%, > 5%, and > 8%.

INFRASTRUCTURE NUISANCE

Distance to the Nearest Interstate

Processing Env.:	ArcGIS 9.1, Python, Geoprocessor	
Scripts:	PinPost_Measures_Infrastructure_NearestInterstate_Euc.py PinPost_Measures_Infrastructure_NearestInterstate_Net.py	
Input Datasets:	PinPost Participant Locations Detailed Roads (County-Level), Study Area	
Concept:	Euclidean and network distances from each respondent location to the nearest Interstate road segment.	
Basic Formula:	N/A	
Output Units:	miles	
Num. of Datasets:	2	(Euclidean and network)
Num. of Records:	2444	(data for all respondent locations)
Num. of Variables:	2 per dataset	(UniqueID plus distance)
Notes:		

Euclidean distances from each respondent location to the nearest Interstate segment were calculated in their entirety within Python. However, due to a lack of success in

scripting network analyses via the geoprocessor, the network distances were generated ahead of time in ArcMap using the Network Analyst extension. Then those distances were extracted within a Python script and written out to the formatted dataset.

Distance to the Nearest Major Road

Processing Env.:	ArcGIS 9.1, Python, Geoprocessor	
Scripts:	PinPost_Measures_Infrastructure_NearestMjrRoad_Euc.py PinPost_Measures_Infrastructure_NearestMjrRoad_Net.py	
Input Datasets:	PinPost Participant Locations Detailed Roads (County-Level), Study Area	
Concept:	Euclidean and network distances from each respondent location to the nearest major road segment, defined as either Interstate, US Highway, or State Highway.	
Basic Formula:	N/A	
Output Units:	miles	
Num. of Datasets:	2	(Euclidean and network)
Num. of Records:	2444	(data for all respondent locations)
Num. of Variables:	2 per dataset	(UniqueID plus distance)

Notes:

Euclidean distances from each respondent location to the nearest major road segment (Interstate, US Highway, or State Highway) were calculated in their entirety within Python. However, due to a lack of success in scripting network analyses via the geoprocessor, the network distances were generated ahead of time in ArcMap using the Network Analyst extension. Then those distances were extracted within a Python script and written out to the formatted dataset.

TRANSIT

Distance to the Nearest Bus Stop

Processing Env.:	ArcGIS 9.1, Python, Geoprocessor
Scripts:	PinPost_Measures_Infrastructure_NearestBusStop_Euc.py PinPost_Measures_Infrastructure_NearestBusStop_Net.py
Input Datasets:	PinPost Participant Locations Bus Stops, Study Area Detailed Roads (County-Level), Study Area
Concept:	Euclidean and network distances from each respondent location to the nearest bus stop.
Basic Formula:	N/A

Output Units:	miles	
Num. of Datasets:	2	(Euclidean and network)
Num. of Records:	2444	(data for all respondent locations)
Num. of Variables:	2 per dataset	(UniqueID plus distance)

Notes:

Euclidean distances from each respondent location to the nearest bus stop were calculated in their entirety within Python. However, due to a lack of success in scripting network analyses via the geoprocessor, the network distances were generated ahead of time in ArcMap using the Network Analyst extension. Then those distances were extracted within a Python script and written out to the formatted dataset.

Bus Stop Density

Processing Env.:	Python, Geoprocessor	
Scripts:	PinPost_Measures_Infrastructure_BusStopDensity_Euc.py PinPost_Measures_Infrastructure_BusStopDensity_Net.py	
Input Datasets:	PinPost Participant Quarter-Mile Euclidean Neighborhoods PinPost Participant One-Mile Euclidean Neighborhoods PinPost Participant Quarter-Mile Network Neighborhoods PinPost Participant One-Mile Network Neighborhoods Bus Stops, Study Area Hydrography, Study Area	
Concept:	Bus Stop Density is the number of bus stops per square mile, excluding area of water features, within each of the respondent neighborhoods.	
Basic Formula:	Number of bus stops / (area of neighborhood – area of water)	
Output Units:	bus stops per square mile	
Num. of Datasets:	2	(Euclidean and network)
Num. of Records:	2444	(data for all respondent locations)
Num. of Variables:	7 per dataset	(UniqueID plus derived data)

Notes:

Bus stop locations were acquired from Chapel Hill Transit, Durham Area Transit Authority, and Triangle Transit Authority. The datasets were merged and cleaned. See the dataset description for more details on these steps.

The bus stops were intersected with the respondent neighborhood polygons, and then the number of stops per respondent neighborhood was recorded. Water features (in the hydrography dataset) were intersected with the respondent neighborhood polygons and the total area of water features was summed by respondent neighborhood. For each respondent location, the number of bus stops was divided by the area of the neighborhood polygon minus the area of water features within that polygon to derive the bus stop density over non-water areas.

In addition to the density variable, the number of bus stops (numerator) and the total non-water area (denominator) for each neighborhood type were also reported in the dataset.

Bus Stop Presence, Reported by Road Segment

Processing Env.:	ArcGIS 9.1, Python, Geoprocessor	
Scripts:	PinPost_Measures_Infrastructure_BusStopPresence.py	
Input Datasets:	Detailed Roads (County-Level), Study Area Bus Stops, Study Area	
Concept:	The presence or absence of one or more bus stops along the road segments comprising each AuditID.	
Basic Formula:	N/A	
Output Units:	0/1 (absence/presence) and number of stops	
Num. of Datasets:	1	
Num. of Records:	40,547	(data for all unique AuditIDs)
Num. of Variables:	3	(AuditID plus derived data)
Notes:	As noted elsewhere, the bus stop locations are a cleaned compilation of three datasets from Chapel Hill Transit, Durham Area Transit Authority, and Triangle Transit Authority. Due to the three sources, some stop locations will contain multiple points representing each separate authority.	

Bus stop locations were acquired from Chapel Hill Transit, Durham Area Transit Authority, and Triangle Transit Authority. The datasets were merged and cleaned. See the dataset description for more details on these steps.

For ease of processing, two new variables were added to the road data to hold the bus stop presence/absence variable and the number of stops for each segment. The bus stops were assigned to the nearest road within 100 feet. This was done to help identify stops in erroneous locations or stops in areas where our road data are incomplete. This process identified 83 stops farther than 100 feet from a road segment. Those 83 segments were handled as follows:

- Forty-one (41) stops are correctly located, but just happen to be in parking lots and other places where we do not have roads. These stops were not moved and were manually assigned to the nearest appropriate road segment.
- Seven (7) stops were located in the Friday Center complex in Chapel Hill. Our data do not contain those roads, and since it is neither a residential nor a recreational area, we decided to not add the roads. Instead, we assigned all 7 stops to the nearest NC 54 segment.
- Thirty-three (33) stops were in incorrect or uncertain locations. These were deleted from the dataset.

Once the segment assignments were complete, the stops per segment were summed and added to the new variable in the road dataset.

The Python script simply aggregated the presence/absence and count variables for the segments to the AuditID and wrote those data out to the formatted dataset.

STREET PATTERN

Road Density

Processing Env.:	Python, Geoprocessor	
Scripts:	PinPost_Measures_StreetPattern_RoadDensity_All.py	
Input Datasets:	PinPost Participant Quarter-Mile Euclidean Neighborhoods PinPost Participant One-Mile Euclidean Neighborhoods PinPost Participant Quarter-Mile Network Neighborhoods PinPost Participant One-Mile Network Neighborhoods Detailed Roads (County-Level), Study Area Hydrography, Study Area	
Concept:	Road Density is the total length of non-major roads (excludes Interstates, US Highways, State Highways, and Access Ramps) per square mile, excluding area of water features, within each of the respondent neighborhoods.	
Basic Formula:	Length of non-major roads / (area of neighborhood – area of water)	
Output Units:	miles per square mile	
Num. of Datasets:	1	
Num. of Records:	2444	(data for all respondent locations)
Num. of Variables:	13	(UniqueID plus derived data)
Notes:	Roads were clipped to the extent of the neighborhood polygons, so the lengths do not include any partial road segments outside the neighborhood.	

The non-major roads were extracted from the full dataset by removing all Interstate, US Highway, State Highway, and Access Ramp segments. The non-major roads were then intersected with the respondent neighborhood polygons, and the lengths of all intersected segments were summed for each respondent neighborhood. Water features (in the hydrography dataset) were intersected with the respondent neighborhood polygons and the total area of water features was summed by respondent neighborhood. For each respondent location, the total length of non-major roads was divided by the area of the neighborhood polygon minus the area of water features within that polygon to derive the road density over non-water areas.

In addition to the density variable, the total length of all non-major roads (numerator) and the total non-water area (denominator) for each neighborhood type were also reported in the dataset.

Major Road Density

Processing Env.:	Python, Geoprocessor	
Scripts:	PinPost_Measures_StreetPattern_MjrRoadDensity_Euc.py PinPost_Measures_StreetPattern_MjrRoadDensity_Net.py	
Input Datasets:	PinPost Participant Quarter-Mile Euclidean Neighborhoods PinPost Participant One-Mile Euclidean Neighborhoods PinPost Participant Quarter-Mile Network Neighborhoods PinPost Participant One-Mile Network Neighborhoods Detailed Roads (County-Level), Study Area Hydrography, Study Area	
Concept:	Major Road Density is the total length of Interstates, US Highways, and State Highways per square mile, excluding area of water features, within each of the respondent neighborhoods.	
Basic Formula:	Length of major roads / (area of neighborhood – area of water)	
Output Units:	miles per square mile	
Num. of Datasets:	4	(one for each neighborhood type)
Num. of Records:	2444	(data for all respondent locations)
Num. of Variables:	4	(UniqueID plus derived data)
Notes:	Roads were clipped to the extent of the neighborhood polygons, so the lengths do not include any partial road segments outside the neighborhood. It is also possible for a respondent to have a density of 0. This is quite common in rural areas where there are fewer major roads.	

The major roads were extracted from the full dataset by subsetting out all Interstate, US Highway, and State Highway segments. The major roads were then intersected with the respondent neighborhood polygons, and the lengths of all intersected segments were summed for each respondent neighborhood. Water features (in the hydrography dataset) were intersected with the respondent neighborhood polygons and the total area of water features was summed by respondent neighborhood. For each respondent location, the total length of major roads was divided by the area of the neighborhood polygon minus the area of water features within that polygon to derive the major road density over non-water areas.

In addition to the density variable, the total length of all major roads (numerator) and the total non-water area (denominator) for each neighborhood type were also reported in the dataset.

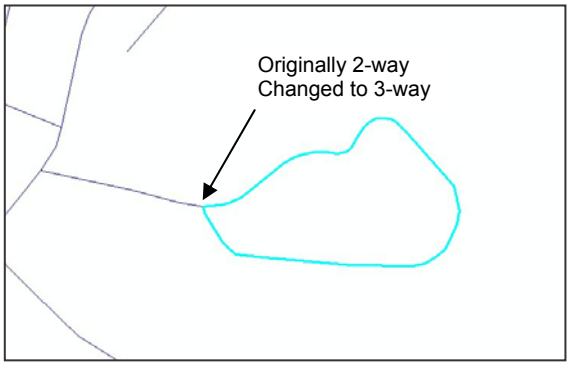
Density of 3-Way and 4-Way Intersections

Processing Env.:	Python, Geoprocessor
Scripts:	PinPost_Measures_StreetPattern_Density_3_4_Way_Intersections_Euc.py PinPost_Measures_StreetPattern_Density_3_4_Way_Intersections_Net.py
Input Datasets:	PinPost Participant Quarter-Mile Euclidean Neighborhoods PinPost Participant One-Mile Euclidean Neighborhoods

	PinPost Participant Quarter-Mile Network Neighborhoods PinPost Participant One-Mile Network Neighborhoods Intersections from Detailed Roads (County-Level), Study Area Hydrography, Study Area	
Concept:	Density of 3-Way and 4-Way Intersections is the total number of 3-way and 4-way intersections per square mile, excluding area of water features, within each of the respondent neighborhoods.	
Basic Formula:	Number of intersections / (area of neighborhood – area of water)	
Output Units:	intersections per square mile	
Num. of Datasets:	2	(Euclidean and network)
Num. of Records:	2444	(data for all respondent locations)
Num. of Variables:	15	(UniqueID plus derived data)
Notes:	The number of intersections per unit area is a measure of the connectivity of the street network. However, judging an intersection can be complex, particularly in older areas where intersections are not regularly spaced, road rights of way have varying sizes, and centerlines may be slightly offset within the right of way creating false positives in terms of intersection counts.	

Road intersections were created as a by-product of the network dataset generation from the source road dataset within ArcGIS. The Junctions feature class tied to the network dataset was exported to a standalone point feature class. The number of intersecting segments was added to these intersection points to represent the *x*-way intersection attribute. This was done using an ArcGIS Visual Basic DLL called Calculate Fnode Tnode 1.1, written by Juan Solorzano and acquired from the ESRI Arcscripts website (http://arcscripts.esri.com/details.asp?dbid=11702). This DLL tool assigns a new variable to the points called Valence and assigns a value equal to the number of segments that intersect the point. This variable was then renamed IntCount.

One small error in this variable was detected when it was noticed that an intersection between a standard segment and a looped segment (e.g. where a road and a cul-de-sac meet) was attributed as 2-way, when in reality it is a 3-way intersection because there are three possible routes that can be taken from the intersection (see figure below). All such errors were corrected prior to processing.



The 3-way intersections and 4-way intersections were subset from the full dataset. The subset intersections were intersected with the respondent neighborhood polygons. The number of 3-way intersections and 4-way intersections, separately and combined, were recorded for each respondent neighborhood. Water features (in the hydrography dataset) were intersected with the respondent neighborhood polygons and the total area of water features was

summed by respondent neighborhood. For each respondent location, the intersection counts (3-way only, 4-way only, and both 3-way and 4-way) were divided by the area of the neighborhood polygon minus the area of water features within that polygon to derive the intersection densities over non-water areas.

In addition to the density variable, the number of 3-way intersections (numerator), the number of 4-way intersections (numerator), the number of both 3-way and 4-way intersections (numerator), and the total non-water area (denominator) for each neighborhood type were also reported in the dataset.

Proximity Gamma Index (Link-to-Node Ratio)

Processing Env.:	Python, Geoprocessor	
Scripts:	PinPost_Measures_StreetPattern_ProximityGammaIndex.py	
Input Datasets:	PinPost Participant Quarter-Mile Euclidean Neighborhoods PinPost Participant One-Mile Euclidean Neighborhoods PinPost Participant Quarter-Mile Network Neighborhoods PinPost Participant One-Mile Network Neighborhoods Detailed Roads (County-Level), Study Area Intersections from Detailed Roads (County-Level), Study Area	
Concept:	The Proximity Gamma Index is a modified link-to-node ratio that accounts for incomplete networks due to invisible boundaries, in this case the respondent neighborhoods.	
Basic Formula:	Number of links / 3 * (Number of nodes – 2)	
Output Units:	N/A	
Num. of Datasets:	1	
Num. of Records:	2444	(data for all respondent locations)
Num. of Variables:	13	(UniqueID plus derived data)

Notes:

The traditional Gamma Index (i.e. link-to-node ratio) of network connectivity is based on graph theory, and is a ratio of the number of links in a network to the maximum possible number of links in that network[1]. As such, it is based on the assumption that the network being analyzed contains a node at both ends of each link, and this creates an index with possible values ranging between 0 and 1. However, if we were to calculate this for neighborhoods in the PIN Postpartum project, we would get different results. This difference would be caused by the fact that the numbers of links and nodes are being counted only if they intersect a buffer around a respondent. Therefore, the possible range of values can fall below 0 or above 1 in some instances. In other projects, we refer to as the **Proximity Gamma Index**, or γ_p, to indicate that it is calculated based on the network within some proximity to a particular location.

[1] Forman, R.T.T. and M. Godron. 1986. *Landscape Ecology*. New York: John Wiley & Sons.

The following are examples that should illustrate the differences.

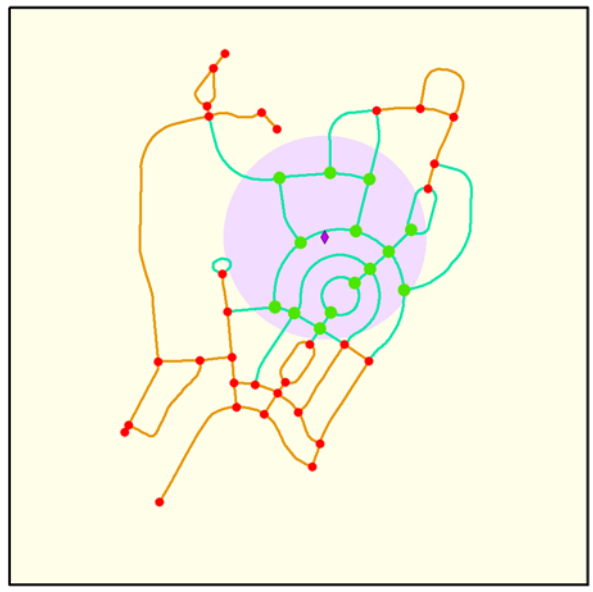
Gamma Index Equation: $\gamma = \frac{L}{3(V-2)}$

where L is the number of links, V is the number of nodes, and $3(V-2)$ is the maximum possible number of links in the network.

Traditional Gamma Index

Links: 66 Nodes: 46 $\gamma = 0.500$

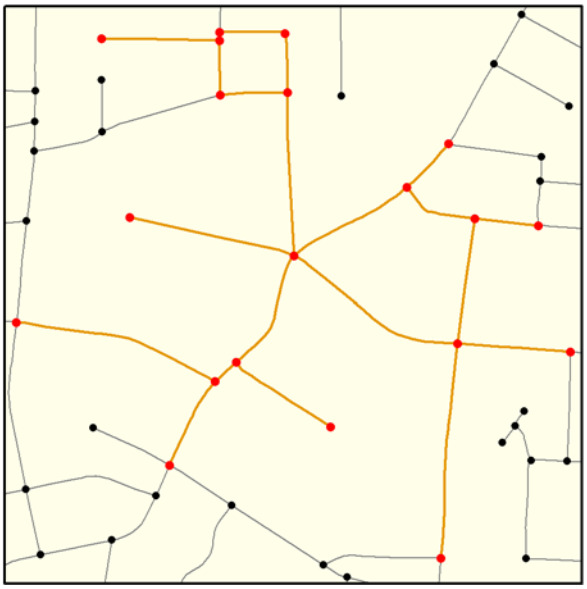
Proximity Gamma Index



Links: 30 Nodes: 14 $\gamma_p = 0.833$

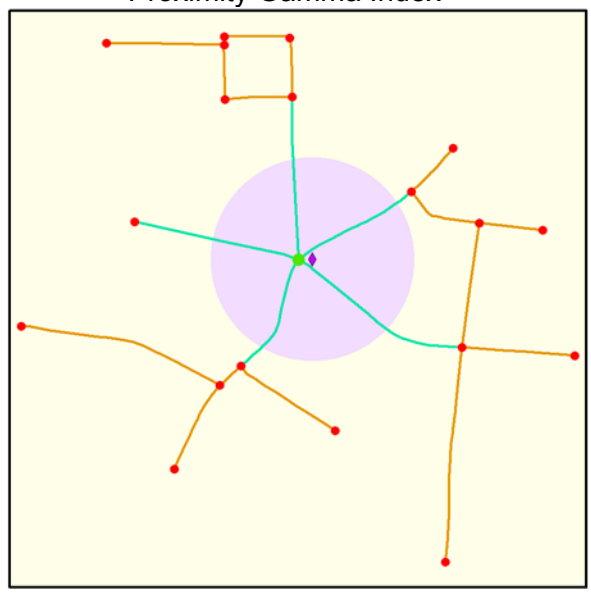
Example 1: Both examples result in values between 0 and 1, but the Proximity Gamma results in a higher value because of a larger difference between links and nodes.

Traditional Gamma Index



Links: 21 Nodes: 20 $\gamma = 0.389$

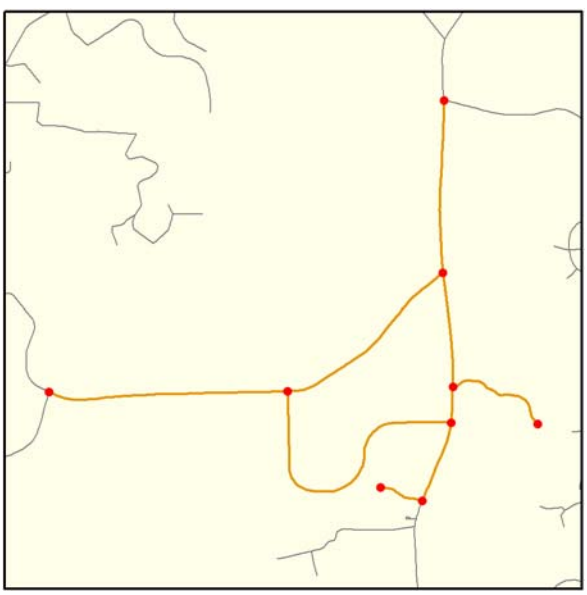
Proximity Gamma Index



Links: 5 Nodes: 1 $\gamma_p = -1.667$

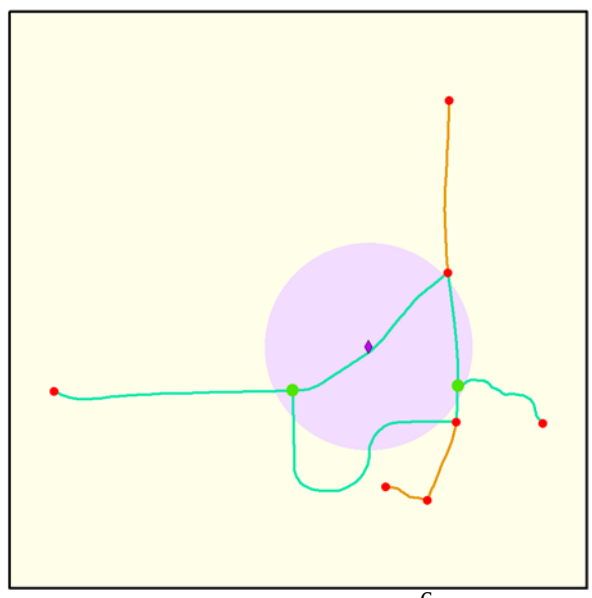
Example 2: In the first anomalous example, the graphic on the right shows only one node being selected within in the buffer. The denominator, which is calculated as *3 * (1 – 2)*, therefore becomes negative. The result is a negative Proximity Gamma.

Traditional Gamma Index



Links: 9 Nodes: 9 $\gamma = 0.429$

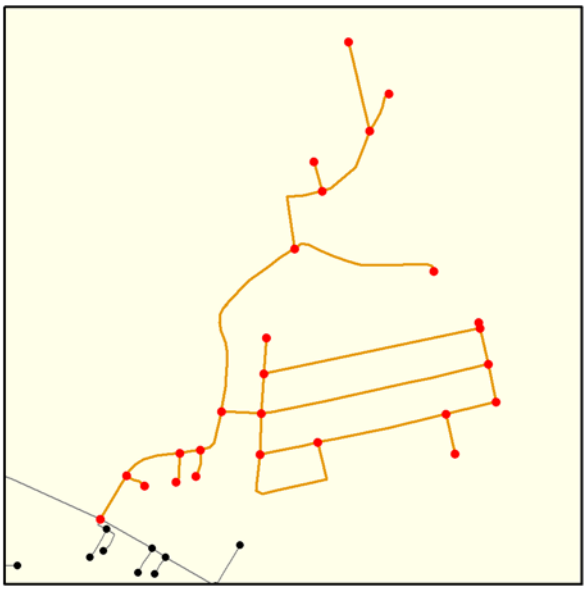
Proximity Gamma Index



Links: 6 Nodes: 2 $\gamma_p = \frac{6}{0} = NaN \Rightarrow 0$

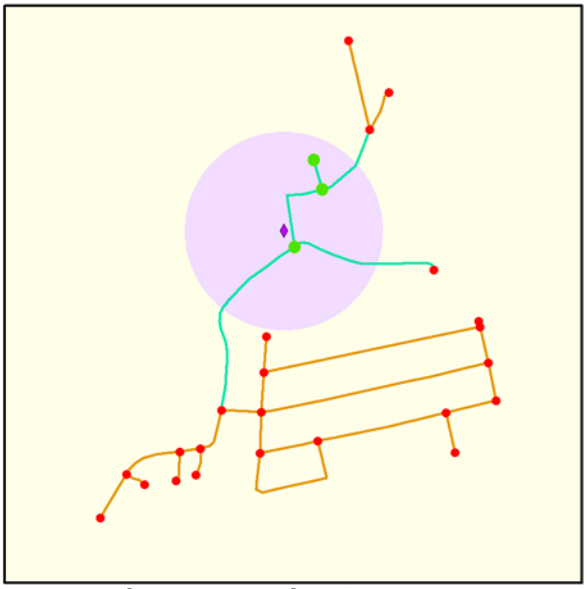
Example 3: In this second anomalous example, the buffer on the right only includes two nodes, resulting in a denominator of 0, calculated as *3 * (2 – 2)*. Although this is not a real number, it falls theoretically along the continuum of values for the Proximity Gamma, so these situations should receive a value of 0 instead of missing.

Traditional Gamma Index



Links: 28 Nodes: 26 $\gamma = 0.389$

Proximity Gamma Index



Links: 5 Nodes: 3 $\gamma_p = 1.667$

Example 4: In the final anomalous example, the graphic on the right shows three nodes within the buffer. The denominator, therefore, is small — in this case, it is *3 * (3 - 2)*, or 3 — and the number of links is high enough to result in a Proximity Gamma greater than 1. This situation tends to occur most often with (a) 3 nodes and more than 3 links and (b) 4 nodes and more than 6 links, although it will occur in any situation where the number of links is greater than 3 * (*V* - 2).

The Proximity Gamma Index provides a measure of connectivity for each respondent's locations. Although we can't constrain the range of values to the traditional 0-1, the results can still be analyzed and interpreted in the same manner. Lower values indicate less connectivity, while higher values indicate higher connectivity. It is easy to calculate and does not take long to process.

In addition to the Index values reported for each respondent, the number of segments (i.e. links) and intersections (i.e. nodes) for each neighborhood type were also reported in the dataset.

LAND USE MIXTURES

Distance to the Closest Park

Processing Env.:	ArcGIS 9.1, Python, Geoprocessor	
Scripts:	PinPost_Measures_LandUse_NearestPark_Euc.py PinPost_Measures_LandUse_NearestPark_Net.py	
Input Datasets:	PinPost Participant Locations Park Access Points, Road Access Detailed Roads (County-Level), Study Area	
Concept:	Euclidean and network distances from each respondent location to the nearest park access point.	
Basic Formula:	N/A	
Output Units:	miles	
Num. of Datasets:	2	(Euclidean and network)
Num. of Records:	2444	(data for all respondent locations)
Num. of Variables:	4 per dataset	(UniqueID plus derived data)
Notes:	Parks in the study area are represented as polygons. To reduce erroneous distances where the distance is calculated to an unrealistic part of the park boundary, we have created a set of access points. These access points represent locations in the parks where people most often enter, usually by road but occasionally on foot as well.	

Euclidean distances from each respondent location to the nearest park access point were calculated in their entirety within Python. However, due to a lack of success in scripting network analyses via the geoprocessor, the network distances were generated ahead of time in ArcMap using the Network Analyst extension. Then those distances were extracted within a Python script and written out to the formatted dataset.

In addition to the distances, the park ID and name were also reported in the dataset.

Distance to the Closest Commercial Land Use

Processing Env.:	ArcGIS 9.1, Python, Geoprocessor
Scripts:	PinPost_Measures_LandUse_NearestCommercial_Euc.py PinPost_Measures_LandUse_NearestCommercial_Net.py
Input Datasets:	PinPost Participant Locations, Within ¼-Mile of Chapel Hill-Durham Land Use Boundary Land Use Parcel Centroids Detailed Roads (County-Level), Study Area
Concept:	Euclidean and network distances from each respondent location to the nearest commercial parcel centroid.
Basic Formula:	N/A
Output Units:	miles

Num. of Datasets:	2	(Euclidean and network)
Num. of Records:	1111	(one per resp. in ¼-mile neighborhood datasets)
Num. of Variables:	2 per dataset	(UniqueID plus distance)
Notes:	Land use data at the parcel level is only available for Chapel Hill and Durham County, so this dataset was only created for respondents living in those areas. For other datasets using neighborhoods and land use, we subset respondents to those living more than ¼ mile from the subset boundary (*n*=1111) and those living more than 1 mile from the subset boundary (*n*=847). For the purposes of this dataset, we used the ¼-mile respondent subset.	

Parcel data were obtained from the County of Durham and the Town of Chapel Hill. Preparation of the dataset included edge-matching of the polygons, normalizing the attribute fields and land use categories, and merging the two together to form a single spatial dataset. The commercial land use parcels were extracted and their centroids created within ArcGIS 9.1.

Euclidean distances from each respondent location to the nearest commercial parcel centroid were calculated in their entirety within Python. However, due to a lack of success in scripting network analyses via the geoprocessor, the network distances were generated ahead of time in ArcMap using the Network Analyst extension. Then those distances were extracted within a Python script and written out to the formatted dataset.

Percent of Area in Geography Devoted to Land Use *i*

Processing Env.:	ArcGIS 9.1, Python, Geoprocessor	
Scripts:	PinPost_Measures_LandUse_Euc.py PinPost_Measures_LandUse_Net.py	
Input Datasets:	PinPost Participant Quarter-Mile Euclidean Neighborhoods, Chapel Hill and Durham Only PinPost Participant One-Mile Euclidean Neighborhoods, Chapel Hill and Durham Only PinPost Participant Quarter-Mile Network Neighborhoods, Chapel Hill and Durham Only PinPost Participant One-Mile Network Neighborhoods, Chapel Hill and Durham Only Land Use Parcel Centroids, Non-Water	
Concept:	This is the relative amount of each of the eight land use types in each respondent neighborhood.	
Basic Formula:	non-water area of land use *i* parcels / non-water area of all parcels	
Output Units:	percentage	
Num. of Datasets:	4	(one for each neighborhood type)
Num. of Records:	1111 847	(¼-mile neighborhood datasets) (1-mile neighborhood datasets)

Num. of Variables: 17 per dataset (does not include UniqueID)
NOTE: These variables are part of a larger dataset containing the Herfindahl-Hirschman Index variables and the Entropy variables.

Notes: Land use data at the parcel level is only available for Chapel Hill and Durham County, so this dataset was only created for respondents living in those areas. In order to avoid having any neighborhoods cross outside of this subset area, we only used the ¼-mile neighborhoods for respondents living more than ¼ mile from the subset boundary (*n*=1111), and we only used the 1-mile neighborhoods for respondents living more than 1 mile from the subset boundary (*n*=847).

Parcel data were obtained from the County of Durham and the Town of Chapel Hill. Preparation of the dataset included edge-matching of the polygons, normalizing the attribute fields and land use categories, and merging the two together to form a single spatial dataset. Water features (in the hydrography dataset) were erased from the parcels to create non-water polygons, and then the centroids of those polygons were generated.

Within the Python script, the parcel centroids were intersected with the respondent neighborhood polygons. The non-water parcel area for each land use category and the total non-water area of all intersected parcels were summed for each respondent location. Then the percentage of each land use category was calculated by dividing the summed parcel area for category *i* by the total parcel area.

In addition to the percentages for each land use category, the summed non-water parcel area for each category and the total non-water parcel area for the neighborhood were reported in the dataset.

Herfindahl-Hirschman Index

Processing Env.: ArcGIS 9.1, Python, Geoprocessor

Scripts: PinPost_Measures_LandUse_Euc.py
PinPost_Measures_LandUse_Net.py

Input Datasets: PinPost Participant Quarter-Mile Euclidean Neighborhoods, Chapel Hill and Durham Only
PinPost Participant One-Mile Euclidean Neighborhoods, Chapel Hill and Durham Only
PinPost Participant Quarter-Mile Network Neighborhoods, Chapel Hill and Durham Only
PinPost Participant One-Mile Network Neighborhoods, Chapel Hill and Durham Only
Land Use Parcel Centroids, Non-Water

Concept: A measure of land use mixture in the neighborhoods.

Basic Formula: the percentage of land-use type 1 times 100 and then squared, plus the percentage of land-use type 2 times 100 and then squared (and so on for each of the land use types of interest)

Output Units: N/A

Num. of Datasets: 4 (one for each neighborhood type)

Num. of Records:	1111 847	(¼-mile neighborhood datasets) (1-mile neighborhood datasets)
Num. of Variables:	2 per dataset NOTE: These variables are part of a larger dataset containing the Percent of Land Use *i* variables and the Entropy variables.	(does not include UniqueID)
Notes:	Land use data at the parcel level is only available for Chapel Hill and Durham County, so this dataset was only created for respondents living in those areas. In order to avoid having any neighborhoods cross outside of this subset area, we only used the ¼-mile neighborhoods for respondents living more than ¼ mile from the subset boundary (*n*=1111), and we only used the 1-mile neighborhoods for respondents living more than 1 mile from the subset boundary (*n*=847).	

The Herfindahl-Hirschman Index (HHI), a commonly accepted measure of market concentration used to detect market monopoly, can be used to assess the level of land use mixture. The HHI is the sum of squares of the percentages of each type of land use in the user-defined neighborhoods. If there is only one land use type in the neighborhood, HHI will equal 10,000. The higher the value of HHI, the lower the level of land use mixture. The formula for calculating HHI is:

$$HHI(k) = \sum_{i=1}^{K} (P_i * 100)^2$$

where P_i is the percentage of land use *i* in the neighborhood and K is the number of land use types.

We calculated the HHI for two different sets of land use categories: (1) Low- or Medium-Density Residential, High-Density Residential, and Commercial; and (2) Low- or Medium-Density Residential, High-Density Residential, Commercial, and Parks/Open Space. These calculations were performed within Python using the parcel-level land use data for Chapel Hill and Durham. The percentages calculated for the **Percent of Area in Geography Devoted to Land Use i** variables are the basis of this index. Simply put, these values were recorded for each respondent and plugged in to the simple formula to calculate the HHI for the two sets of land use categories.

Entropy Index

Processing Env.:	ArcGIS 9.1, Python, Geoprocessor
Scripts:	PinPost_Measures_LandUse_Euc.py PinPost_Measures_LandUse_Net.py
Input Datasets:	PinPost Participant Quarter-Mile Euclidean Neighborhoods, Chapel Hill and Durham Only PinPost Participant One-Mile Euclidean Neighborhoods, Chapel Hill and Durham Only PinPost Participant Quarter-Mile Network Neighborhoods, Chapel Hill and Durham Only PinPost Participant One-Mile Network Neighborhoods, Chapel Hill

	and Durham Only Land Use Parcel Centroids, Non-Water
Concept:	A measure of variation, dispersion or diversity of land use.
Basic Formula:	negative of proportion of land use (p) of type 1 times the log of that proportion, plus proportion of land use (p) of type 2 times the log of that proportion, and so on for each of *k* land-use categories all divided by the log of *k*
Output Units:	N/A
Num. of Datasets:	4 (one for each neighborhood type)
Num. of Records:	1111 (¼-mile neighborhood datasets) 847 (1-mile neighborhood datasets)
Num. of Variables:	2 per dataset (does not include UniqueID) NOTE: These variables are part of a larger dataset containing the Percent of Land Use *i* variables and the HHI variables.
Notes:	Land use data at the parcel level is only available for Chapel Hill and Durham County, so this dataset was only created for respondents living in those areas. In order to avoid having any neighborhoods cross outside of this subset area, we only used the ¼-mile neighborhoods for respondents living more than ¼ mile from the subset boundary (*n*=1111), and we only used the 1-mile neighborhoods for respondents living more than 1 mile from the subset boundary (*n*=847).

The Entropy index is a measure of variation, dispersion or diversity. It measures the degree to which land uses are heterogeneously distributed within a neighborhood. A value of 0 indicates homogeneity, wherein all land uses are of one single type; a value of 1 means heterogeneity, wherein area is evenly distributed among all land use categories. The formula for calculating Entropy is:

$$Entropy = \frac{\{-\sum_{k}[(p_i)(\ln p_i)]\}}{\ln k}$$

where P_i is the percentage of land use k in the neighborhood.

We calculated the Entropy for two different sets of land use categories: (1) Low- or Medium-Density Residential, High-Density Residential, and Commercial; and (2) Low- or Medium-Density Residential, High-Density Residential, Commercial, and Parks/Open Space. These calculations were performed within Python using the parcel-level land use data for Chapel Hill and Durham. The percentages calculated for the **Percent of Area in Geography Devoted to Land Use i** variables are the basis of this index. Simply put, these values were recorded for each respondent and plugged in to the formula to calculate the Entropy Index for the two sets of land use categories.

Gravity Measure to Commercial Land Use with Inverse Distance

Processing Env.:	ArcGIS 9.1, Python, Geoprocessor
Scripts:	PinPost_Measures_LandUse_Gravity_Euc.py PinPost_Measures_LandUse_Gravity_Net.py

Input Datasets:	PinPost Participant Locations, Within ¼ Mile of Chapel Hill-Durham Land Use Boundary PinPost Participant Locations, Within 1 Mile of Chapel Hill-Durham Land Use Boundary Land Use Parcel Centroids, Non-Water Detailed Roads (County-Level), Study Area	
Concept:	A measure of accessibility to commercial land use.	
Basic Formula:	see below	
Output Units:	N/A	
Num. of Datasets:	2	(Euclidean and network)
Num. of Records:	1111	(one per resp. in ¼-mile neighborhood datasets)
Num. of Variables:	3 per dataset	(UniqueID plus derived data)
Notes:	Land use data at the parcel level is only available for Chapel Hill and Durham County, so this dataset was only created for respondents living in those areas. For other datasets using neighborhoods and land use, we subset respondents to those living more than ¼ mile from the subset boundary (*n*=1111) and those living more than 1 mile from the subset boundary (*n*=847). For the purposes of this dataset, we calculated Gravity for all ¼-mile respondent IDs with both the ¼-mile and 1-mile limits on the distance calculations. Because of this approach, any respondents present in the ¼-mile dataset but not in the 1-mile dataset have a missing value (.) for the 1-mile Gravity variables.	

In the simplest terms, this Gravity measure can be defined as the sum of accessibility for residents to commercial land use, discounted by the distance decay function (-2) between their residences and the commercial locations. The formula for calculating this particular Gravity measure is:

$$A_i = \sum_j d_{ij}^{-\beta}$$

where A_i is the integral accessibility to land use *j* (in this case, commercial) from respondent location *i*, d_{ij} is the distance (Euclidean or network) from respondent location *i* to land use *j*, and $d_{ij}^{-\beta}$ is the inverse power function representing impedance. In our case, we used a power of 2 for these calculations.

The first step was to calculate the distances from each respondent location to all commercial land use parcel centroids within the Chapel Hill / Durham area. Euclidean distances from each respondent location to the nearest commercial parcel centroid were calculated in their entirety within Python. However, due to a lack of success in scripting network analyses via the geoprocessor, the network distances were generated ahead of time in ArcMap using the Network Analyst extension. The distance calculations were capped at ¼ mile and 1 mile to represent these neighborhoods.

The remainder of the processing was performed within Python. For each respondent, each distance to a commercial land use parcel centroid was inverted, or raised to the -2 power, and all of the inverted distances were summed to derive the Gravity measure.

PHYSICAL ACTIVITY (PA) FACILITIES AND PARKS

Distance to the Nearest PA Facility

Processing Env.:	ArcGIS 9.1, Python, Geoprocessor	
Scripts:	PinPost_Measures_PAFacilities_NearestPAFacility_Euc.py PinPost_Measures_PAFacilities_NearestPAFacility_Net.py	
Input Datasets:	PinPost Participant Locations Recreational Facility Locations Detailed Roads (County-Level), Study Area	
Concept:	Euclidean and network distances from each respondent location to the nearest physical activity facility.	
Basic Formula:	N/A	
Output Units:	miles	
Num. of Datasets:	2	(Euclidean and network)
Num. of Records:	2444	(data for all respondent locations)
Num. of Variables:	2 per dataset	(UniqueID plus distance)
Notes:	Physical activity facility locations were acquired from the Reference USA database, including the facility type, name and latitude and longitude (see PINPA_FacilitiesCallingProtocol.doc for more information). These locations were corrected manually by using tax parcels, air photos, and Google Maps and Google Earth for validation. Points were moved as close to the correct location as possible, making sure that they remained within 50 feet of a road for network analysis purposes.	

Euclidean distances from each respondent location to the nearest physical activity facility were calculated in their entirety within Python. However, due to a lack of success in scripting network analyses via the geoprocessor, the network distances were generated ahead of time in ArcMap using the Network Analyst extension. Then those distances were extracted within a Python script and written out to the formatted dataset.

Gravity Measure to PA Facilities with Inverse Distance

Processing Env.:	ArcGIS 9.1, Python, Geoprocessor
Scripts:	PinPost_Measures_PAFacilities_Gravity_Euc.py PinPost_Measures_PAFacilities_Gravity_Net.py
Input Datasets:	PinPost Participant Locations Recreational Facility Locations Detailed Roads (County-Level), Study Area
Concept:	A measure of accessibility to recreational facilities.

Basic Formula:	see below	
Output Units:	N/A	
Num. of Datasets:	2	(Euclidean and network)
Num. of Records:	2444	(data for all respondent locations)
Num. of Variables:	3 per dataset	(UniqueID plus derived data)
Notes:	Physical activity facility locations were acquired from the Reference USA database, including the facility type, name and latitude and longitude (see PINPA_FacilitiesCallingProtocol.doc for more information). These locations were corrected manually by using tax parcels, air photos, and Google Maps and Google Earth for validation. Points were moved as close to the correct location as possible, making sure that they remained within 50 feet of a road for network analysis purposes.	

In the simplest terms, this Gravity measure can be defined as the sum of accessibility for residents to recreational facilities, discounted by the distance decay function (-2) between their residences and the facility locations. The formula for calculating this particular Gravity measure is:

$$A_i = \sum_j d_{ij}^{-\beta}$$

where A_i is the integral accessibility to land use *j* (in this case, commercial) from respondent location *i*, d_{ij} is the distance (Euclidean or network) from respondent location *i* to facility *j*, and $d_{ij}^{-\beta}$ is the inverse power function representing impedance. In our case, we used a power of 2 for these calculations.

The first step was to calculate the distances from each respondent location to all recreational facilities. Euclidean distances from each respondent location to the nearest recreational facility were calculated in their entirety within Python. However, due to a lack of success in scripting network analyses via the geoprocessor, the network distances were generated ahead of time in ArcMap using the Network Analyst extension. The distance calculations were capped at ¼ mile and 1 mile to represent these neighborhoods.

The remainder of the processing was performed within Python. For each respondent, each distance to a recreational facility was inverted, or raised to the -2 power, and all of the inverted distances were summed to derive the Gravity measure.

BASIC DATA

Respondent Neighborhood Areas and Amount of Water Features in each Neighborhood

Processing Env.: Python, Geoprocessor

Scripts: PinPost_Measures_BasicData_NbrhdAreas.py

Input Datasets: PinPost Participant Quarter-Mile Euclidean Neighborhoods
PinPost Participant One-Mile Euclidean Neighborhoods
PinPost Participant Quarter-Mile Network Neighborhoods
PinPost Participant One-Mile Network Neighborhoods
Hydrography Area by Respondent by Neighborhood Type

Concept: Dataset containing total area of each respondent's neighborhoods and area of water features in those neighborhoods.

Basic Formula: NA

Output Units: square miles

Num. of Datasets: 1

Num. of Records: 2444 (data for all respondent locations)

Num. of Variables: 9 (UniqueID plus derived data)

Notes:

The variables in this dataset are meant to be used by an investigator to modify or normalize variables from other datasets that use area in the calculation. For example, all density variables are calculated using neighborhood areas minus the amount of water in each neighborhood. The variables in this dataset contain the original neighborhood areas and the area of all hydrographic features in each neighborhood, so a user could use the raw counts associated with the density variables to recalculate density based on total area, not just non-water areas.

Percentage of Neighborhoods within Study Area Boundaries

Processing Env.: Python, Geoprocessor

Scripts: PinPost_Measures_BasicData_NbrhdInStudyArea.py

Input Datasets: PinPost Participant Quarter-Mile Euclidean Neighborhoods
PinPost Participant One-Mile Euclidean Neighborhoods
PinPost Participant Quarter-Mile Network Neighborhoods
PinPost Participant One-Mile Network Neighborhoods
Study Area Boundary Line
Study Area Polygon

Concept: Dataset containing percentage of each neighborhood type for each respondent that falls within the four-county study area.

Basic Formula: NA

Output Units: percentage

Num. of Datasets: 1

Num. of Records: 2444 (data for all respondent locations)

Num. of Variables: 9 (UniqueID plus derived data)

Notes:

This dataset is meant to inform users of any respondent neighborhoods that are only partially contained within the study area. For example, a respondent who lives 0.75 miles from the study area boundary will have 100% of their quarter-mile Euclidean neighborhood contained within the study area, but a portion of the one-mile Euclidean neighborhood will fall outside the study area. This is important when considering inclusion of derived variables in a model, because some values may be misleading when only a portion of the neighborhood is analyzed.

HERRING MEASURES

The datasets in this section were requested by Amy Herring. Even though they are not part of the official PinPost measures database, their descriptions are still included.

Mean and Median Tax Value of Parcels (home + lot)

Processing Env.: ArcGIS 9.1, Python, Geoprocessor

Scripts: PinPost_Measures_Herring_ParcelValue.py

Input Datasets: Tax Parcel Centroids, with Total Value Calculated
Detailed Roads (County-Level), Study Area

Concept: NA

Basic Formula: N/A

Output Units: US dollars

Num. of Datasets: 1

Num. of Records: 40,547 (data for all unique AuditIDs)

Num. of Variables: 7 (AuditID plus derived data)

Notes:

Parcel data were obtained from all four counties in the study area. To reduce data preparation time and to speed up processing time, the parcel data for the four counties were prepared by converting the polygons to centroids prior to running the script. Prior to the conversion, the tax value information was stored in a commonly-named attribute field for each county. After conversion, any non-parcel polygons were deleted. Finally,

the four centroid data sets were merged together. Centroids were generated with the script PinPost_PrepParcels_for_MeanTaxValue.py.

NOTE: There will definitely be error introduced due to overlapping parcels along the county boundaries. This could not be avoided without spending a large amount of time cleaning the data.

In this script, the mean and median tax values of all parcels along each audit road segment were calculated. The parcel centroids were assigned to the nearest road segment within 1000 feet. Any centroids lying farther than 1000 feet from a road were excluded.

V. Spatial Data Analysis

This section contains descriptions of various spatial analyses performed in the PIN Postpartum Study in 2005 and 2006. The analyses are listed in the order of completion. These analyses preceded the creation of the derived datasets described in Section IV.

Each analysis is numbered, and contains the names of the analysts involved, the date the analysis was completed, the datasets used in the analysis, the scripts used in the analysis, the outputs, and any additional documentation. Reports and results are listed with their directory path and file name, and are available upon request.

1) Evaluation of Road Segments within Different Buffer Sizes

Analysts:	Brian Frizzelle
Date Completed:	29 March 2005
Datasets Used:	PinPost_OrigParticipants_SA (*old version of final participant dataset*), Roads_Alamance, Roads_Chatham, Roads_Durham, Roads_Orange
Scripts:	PIN_PP_roaddist_buffers_bg.py
Outputs:	Various geodatabase tables containing descriptive statistics, organized by block group
Additional Documentation:	\PIN\Postpartum\Documents\Reports\PIN Summary Report – Road Statistics.doc

The original plan for selecting road segments was to identify block groups with concentrations of participants and audit all segments within each block group. This idea was dropped when an alternative idea was proposed, which was to buffer each participant's location and only audit the roads in those "neighborhoods". It was unclear what buffer distance to use, so we decided to calculate the number of segments within buffer distances of 1/4 mile, 1/2 mile, and 1 mile.

A Python script was written to buffer the points by the three different distances, select the segments within the buffers, and generate the descriptive statistics. One table was generated per buffer distance, containing statistics calculated by block group, and including the following:

- Number of segments within the buffers
- Total length, in miles, of segments within the buffers
- Number of segments outside the buffers
- Total length, in miles, of segments outside the buffers
- Percentage of road length within the buffers

After evaluating the results, it was decided to use either 1/4-mile or 1/2-mile buffers.

2) Distance from Women to Road

Analysts:	Brian Frizzelle
Date Completed:	1 April 2005
Datasets Used:	PinPost_OrigParticipants_SA (*old version of final participant dataset*), Roads_Alamance, Roads_Chatham, Roads_Durham, Roads_Orange
Scripts:	PIN_PP_ptrd_distance.py
Outputs:	PinPost_RdDist (now archived in the Women_Points_Archive.mdb geodatabase, in the PinPost Women Points Archive.zip file, located in the \\PIN\Postpartum\Archive directory)
Additional Documentation:	

When we compiled the original set of participant locations from the geocoded and GPS points, we noticed that many of the points were far from road segments in our data sets. It was determined that many of these positional errors were due to missing road segments, points at a house far removed from the road, or in the wrong location due to geocoding errors. It was decided to hand-correct these points. Since there was a total of 435 points, it was necessary to identify those points with the greatest positional error.

A Python script was written to calculate the distance and azimuth from each point to the nearest road segment. These values were appended to the attribute table in the input point feature class and saved to a new feature class. These values were then used to stratify the points from farthest to nearest, and they were then hand corrected in that order.

3) Evaluation of Road Segments within Static and Randomly Shifted Buffers

Analysts:	Brian Frizzelle
Date Completed:	30 April 2005
Datasets Used:	PinPost_Participants (*old version of final participant dataset*), Roads_PPP_Counties
Scripts:	PIN_PP_roaddist_buffers_bg.py, random_point_shift.py
Outputs:	Various geodatabase tables containing descriptive statistics, organized by block group
Additional Documentation:	

The previous plan for selecting road segments was to buffer around each participant's location by either 1/4- or 1/2- mile, and select the segments within the buffer (see Analysis #1). However, there was concern that by doing so, the location might be deductively disclosed and the confidentiality compromised. So an alternative was proposed in which the locations would be shifted in a random direction by either 1/8- or 1/4- mile, and then the shifted locations would be buffered by larger distances, either 3/8- or 3/4-mile.

A script was written to randomly shift the points. The road distance buffer script, used in Analysis #1, was also used. One table was generated per buffer distance, containing statistics calculated by block group, and including the same statistics as in Analysis #1.

After evaluating the results, it was decided to not shift the locations and use 1/4-mile buffers.

4) Estimate of Road Segments Needed to Complete Audit in 2006

Analysts:	Brian Frizzelle
Date Completed:	6 March 2006
Datasets Used:	PinPost_Participants (*old version of final participant dataset*), PIN3_GDT_AllParticipants_SASub_SP, Blockgroups_PPP, Roads_PPP_Counties
Scripts:	PIN_PP_roaddist_buffers_bg.py, random_point_shift.py
Outputs:	A geodatabase table containing segment numbers and percentages, organized by block group
Additional Documentation:	\PIN\Postpartum\Documents\Reports\PIN Summary Report - Audit Completion Estimation.doc

It was requested that some analyses be run to provide an estimate of the amount of work needed to complete the audit in the summer 2006. Analyses were run to give the number of segments needed to complete the ¼-mile neighborhoods around the PinPost women, and the number needed to complete the neighborhoods around all PIN3 women. A second analysis was done to calculate the number of times each of the *duplicate reasons* occurred in the road dataset prior to the renumbering of the segments. Finally, the number and percentage of audit road segments by block group was calculated based on the current PinPost participant locations. The report mentioned under *Additional Documentation* above contains a detailed description of the analysis, plus the results.

Appendices

Appendix I: Spatial Database Schematics

If you have any questions regarding the structure of the spatial database, please contact Brian Frizzelle (bgf@email.unc.edu).

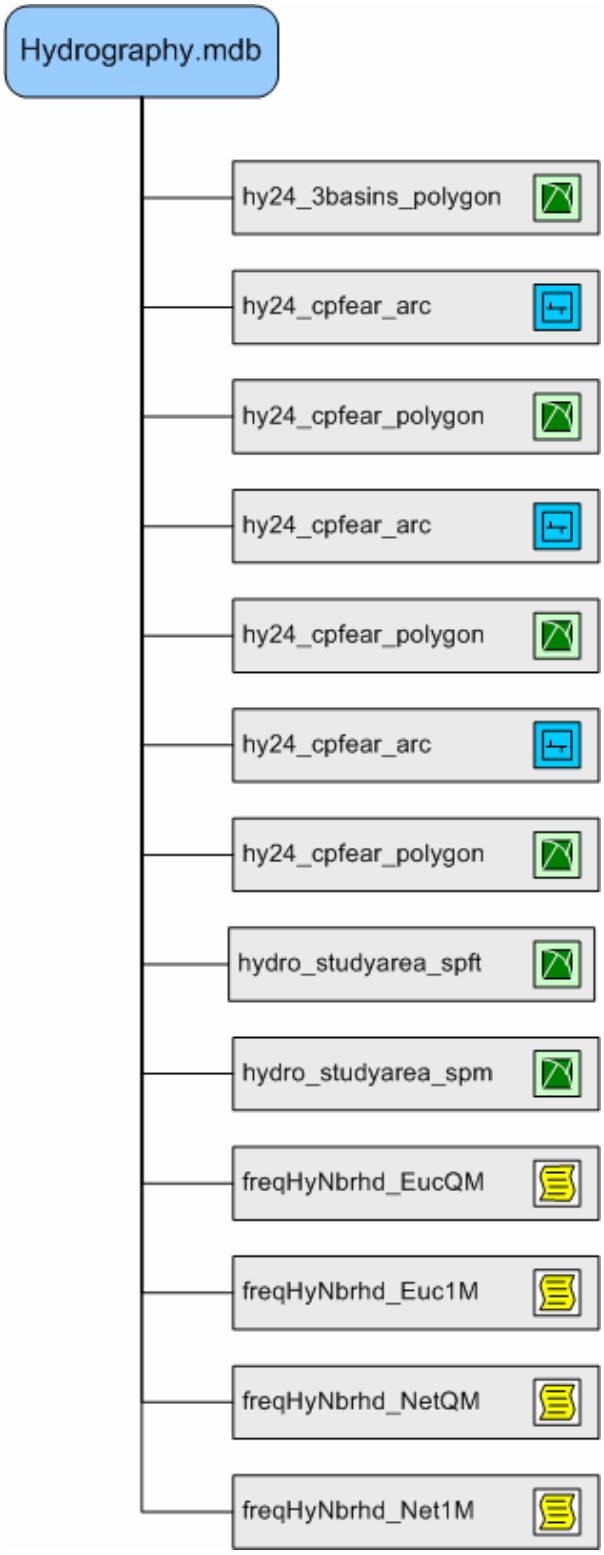
This appendix contains flowchart-style schematics that show the internal structure of the various spatial databases that comprise the PIN Postpartum Project Spatial Database.

The following Geodatabases are represented:

- Hydrography
- Miscellaneous_Features
- PIN_CountyData
- PIN_Postpartum
- Roads
- Roads_100ftSegs
- Topography_BaseData

The following raster directories are represented:

- Land Cover
- Topography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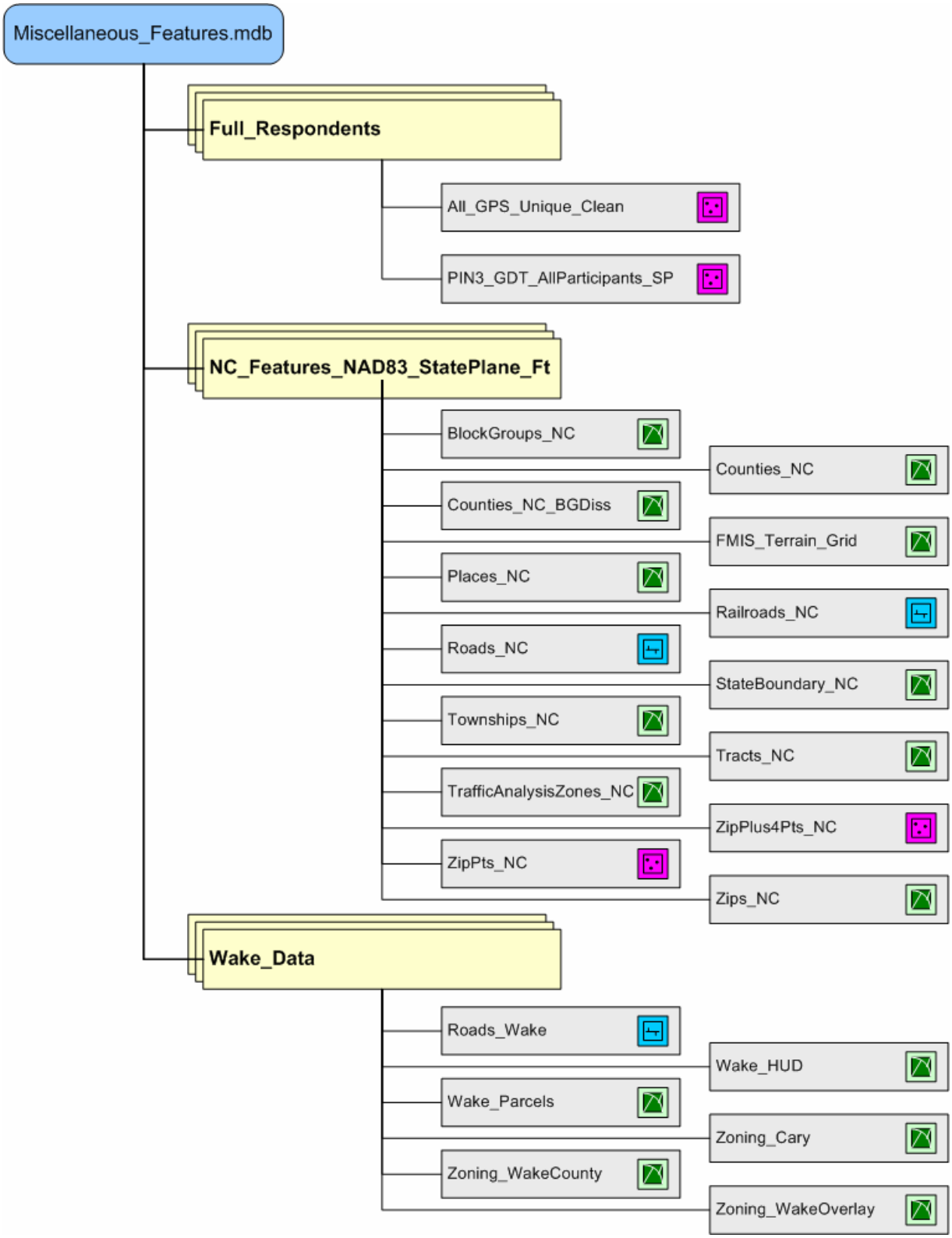
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Counties_NC
Counties_NC_BGDiss
FMIS_Terrain_Grid
Places_NC
Railroads_NC
Roads_NC
StateBoundary_NC
Townships_NC
Tracts_NC
TrafficAnalysisZones_NC
ZipPlus4Pts_NC
ZipPts_NC
Zips_NC
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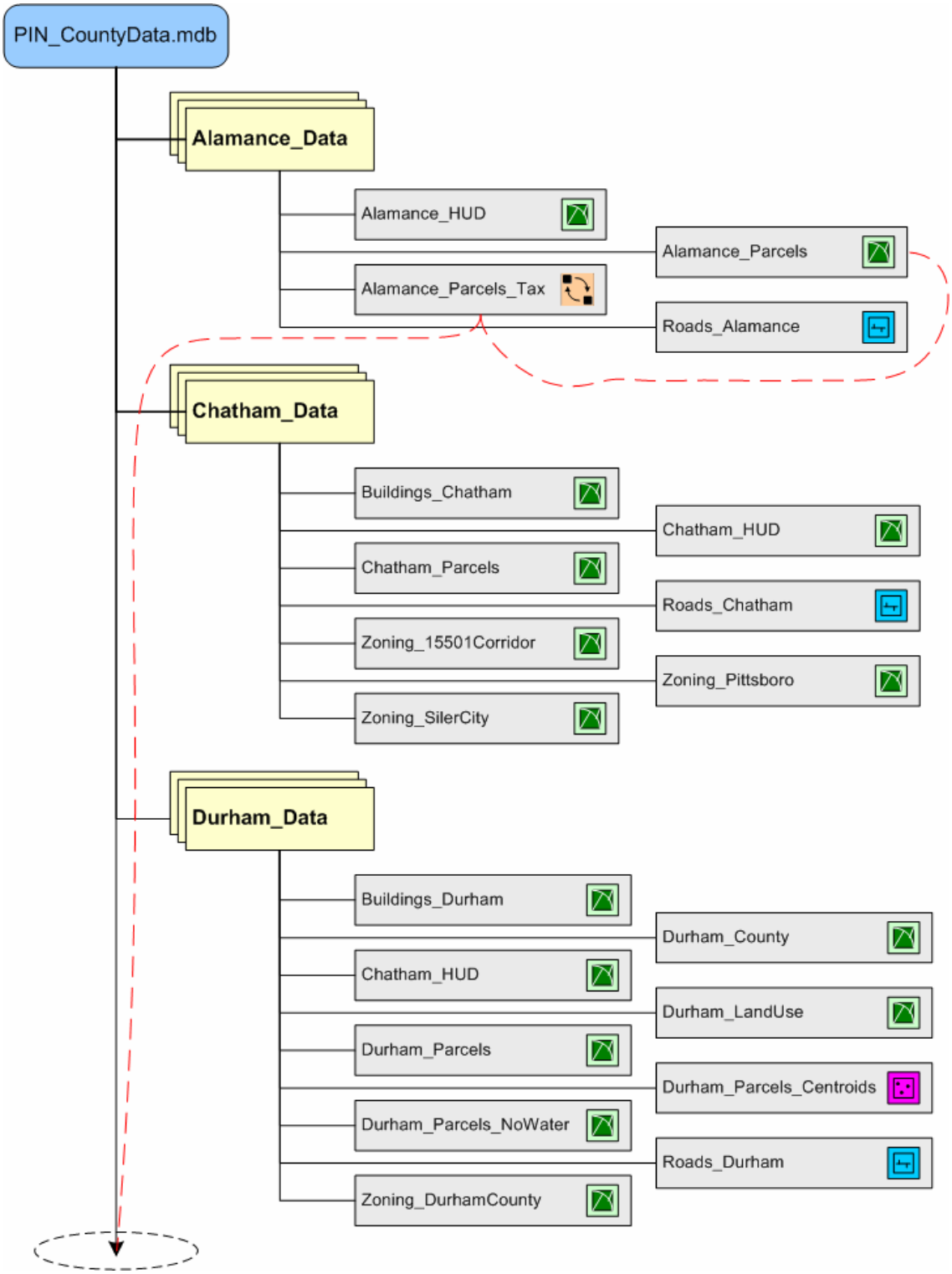
Roads_Wake
Wake_HUD
Wake_Parcels
Zoning_Cary
Zoning_WakeCounty
Zoning_WakeOverlay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Alamance_Parcels_Tax
Roads_Alamance
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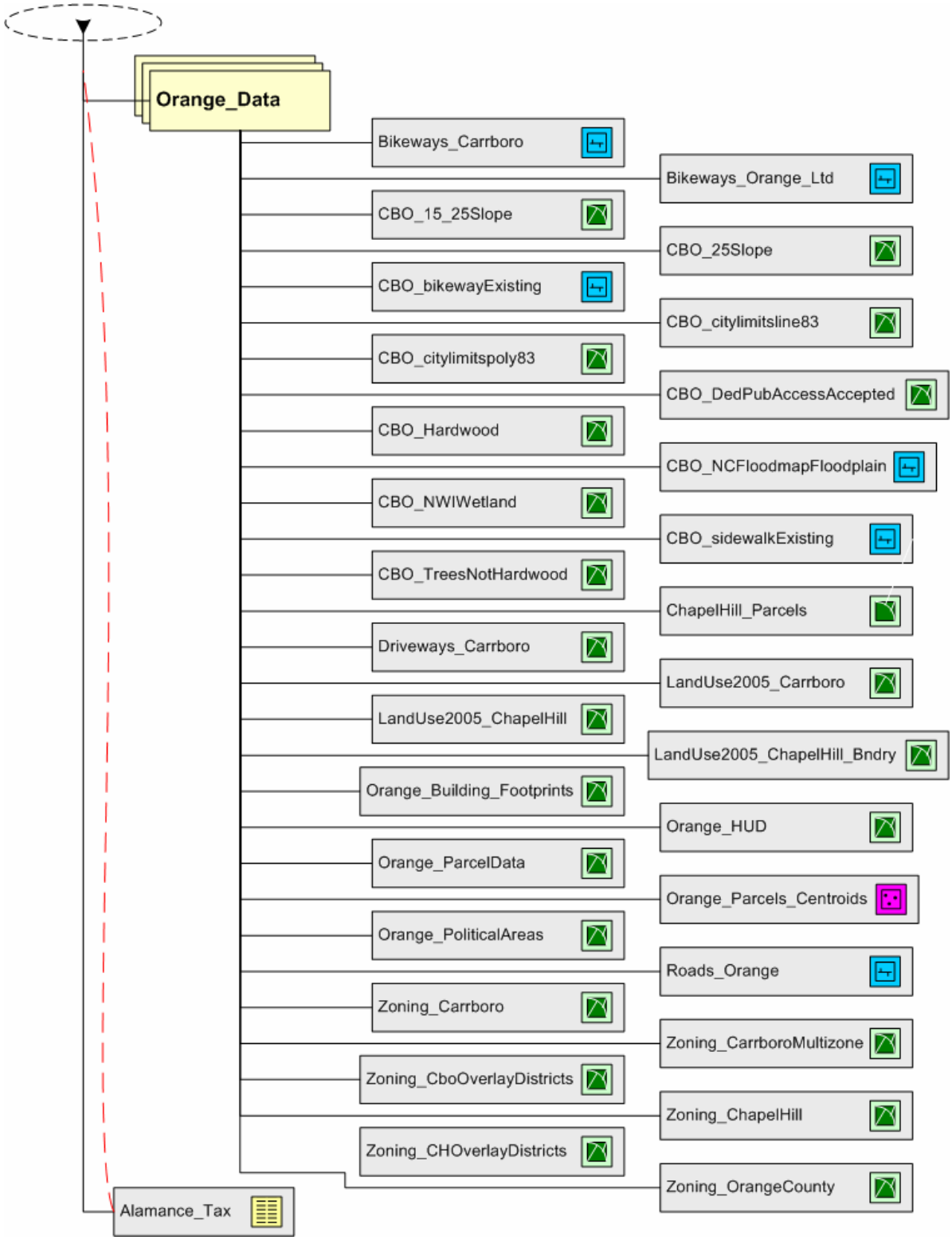
Chatham_HUD
Chatham_Parcels
Roads_Chatham
Zoning_15501Corridor
Zoning_Pittsboro
Zoning_SilerCity
Durham_Data
Buildings_Durham
Durham_County
Chatham_HUD
Durham_LandUse
Durham_Parcels
Durham_Parcels_Centroids
Durham_Parcels_NoWater
Roads_Durham
Zoning_DurhamCounty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CBO_citylimitspoly83
CBO_DedPubAccessAccepted
CBO_Hardwood
CBO_NCFloodmapFloodplain
CBO_NWIWetland
CBO_sidewalkExisting
CBO_TreesNotHardwood
ChapelHill_Parcels
Driveways_Carrboro
LandUse2005_Carrboro
LandUse2005_ChapelHill
LandUse2005_ChapelHill_Bndry
Orange_Building_Footprints
Orange_HUD
Orange_ParcelData
Orange_Parcels_Centroids
Orange_PoliticalAreas
Roads_Orange
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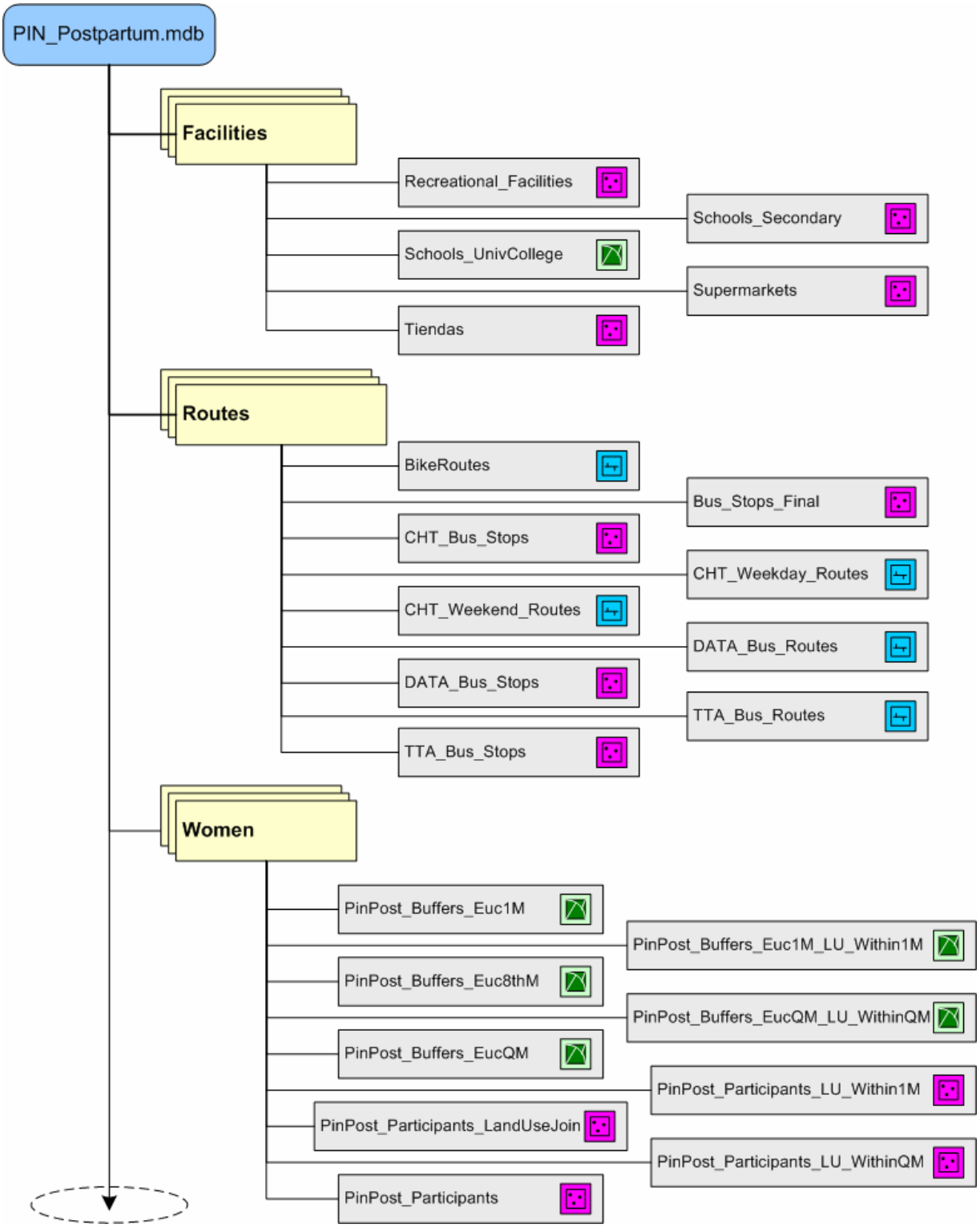
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Schools_UnivCollege
Supermarkets
Tiendas
Routes
BikeRoutes
Bus_Stops_Final
CHT_Bus_Stops
CHT_Weekday_Routes
CHT_Weekend_Routes
DATA_Bus_Routes
DATA_Bus_Stops
TTA_Bus_Routes
TTA_Bus_Stops
Women
PinPost_Buffers_Euc1M
PinPost_Buffers_Euc1M_LU_Within1M
PinPost_Buffers_Euc8thM
PinPost_Buffers_EucQM_LU_WithinQM
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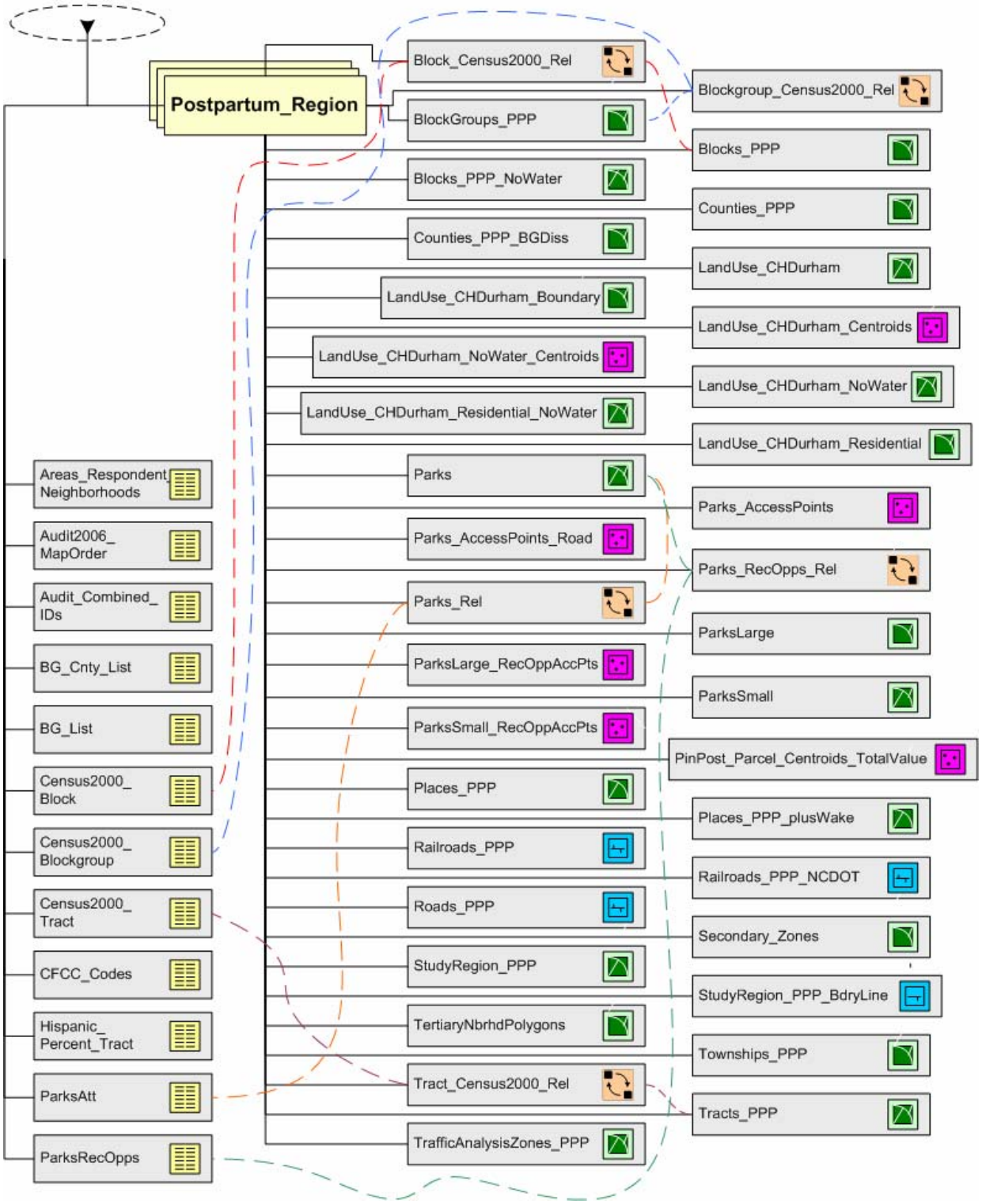
PinPost_Participants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Counties_PPP_BGDiss
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LandUse_CHDurham_NoWater_Centroids
LandUse_CHDurham_Residential_NoWater
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Parks_Rel
ParksLarge_RecOppAccPts
ParksSmall_RecOppAccPts
Places_PPP
Railroads_PPP
Roads_PPP
StudyRegion_PPP
TertiaryNbrhdPolygons
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TrafficAnalysisZones_PPP
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ParksSmall
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Railroads_PPP_NCDOT
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Townships_PPP
Tracts_PPP
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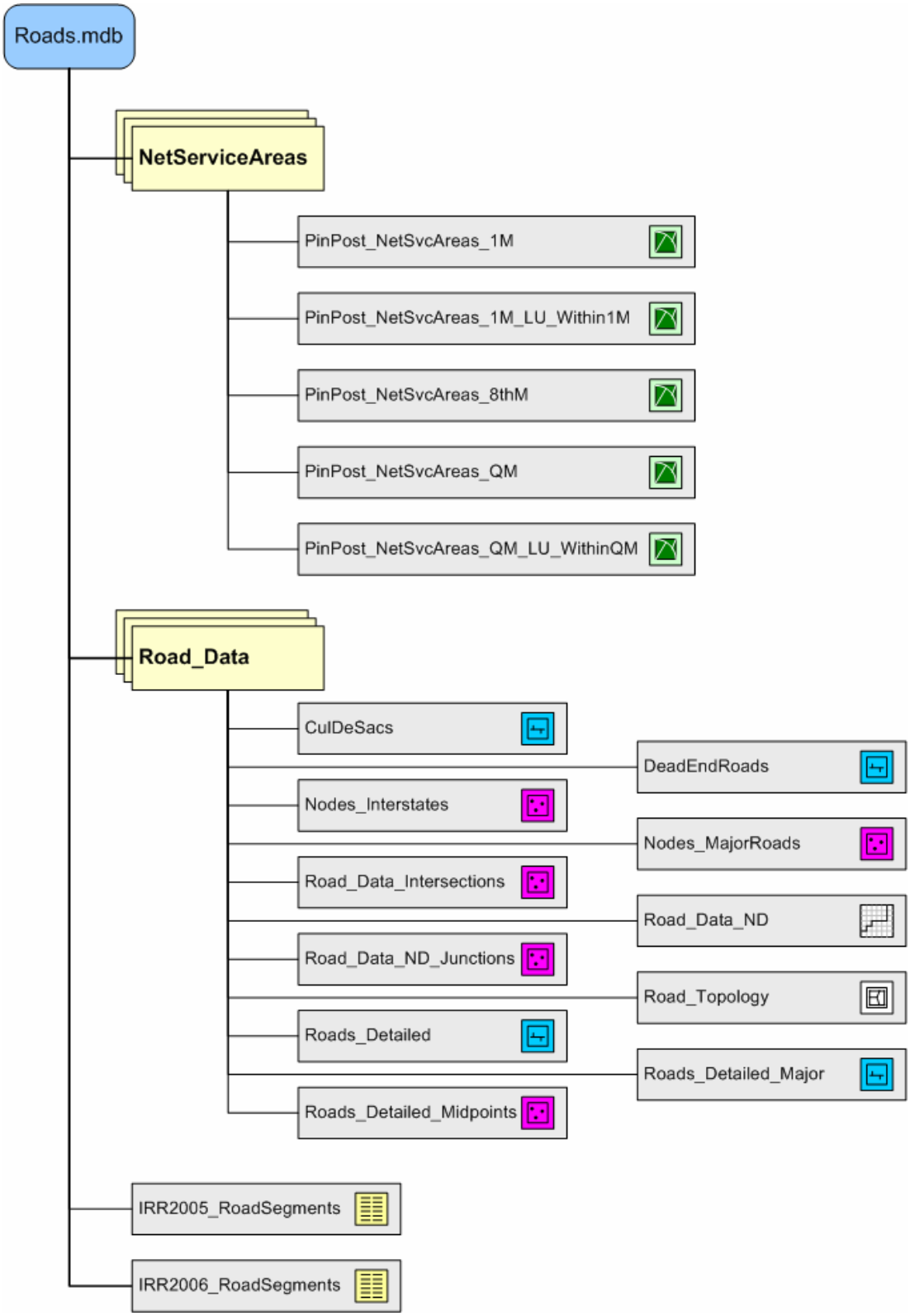
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Nodes_MajorRoads
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Road_Data_ND
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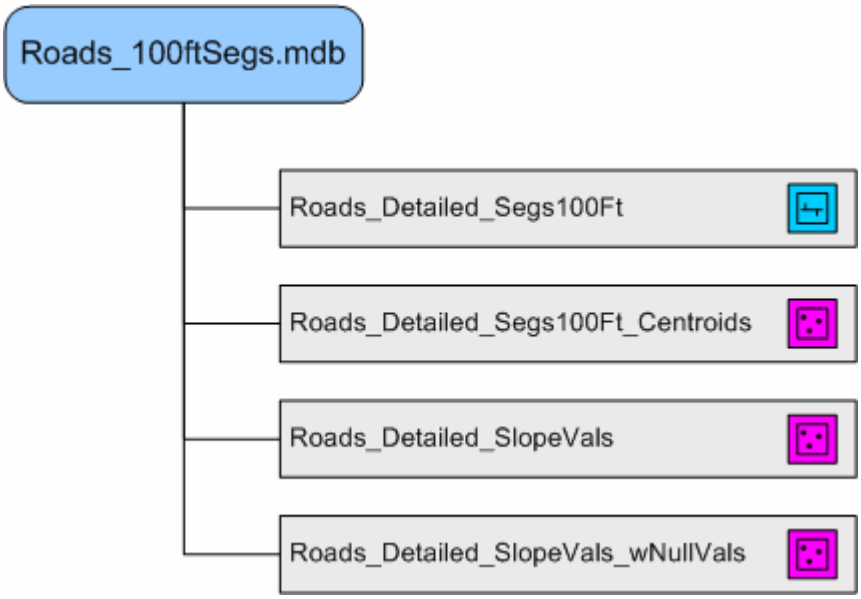
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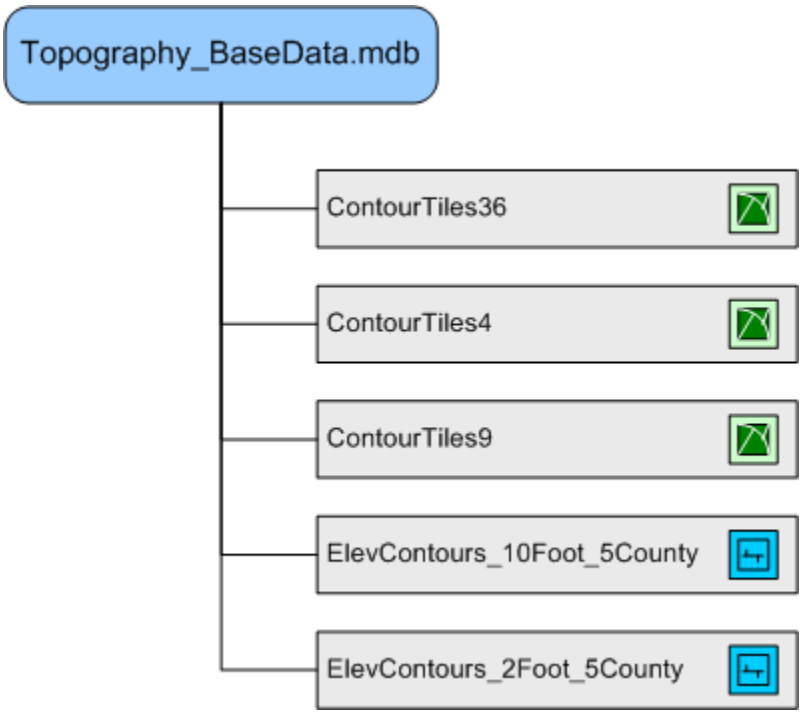
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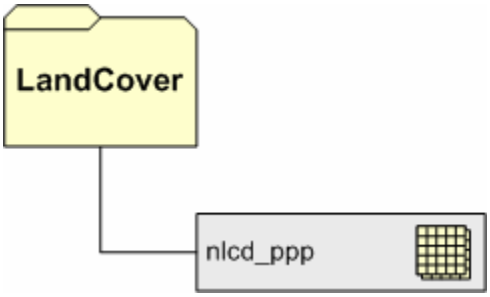
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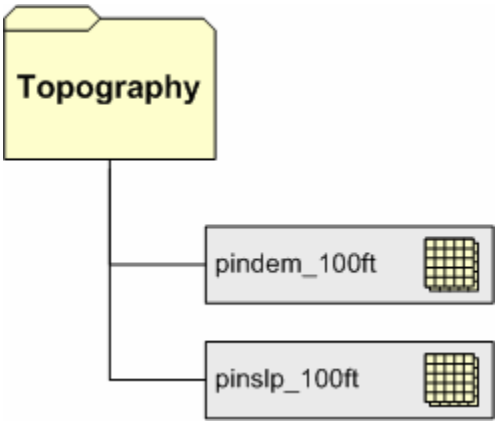

Topography
pindem_100ft
pinslp_100ft

Appendix II: Constructed Variable List

PIN POSTPARTUM NAMING CONVENTION – PRESET VARIABLE NAMES

AuditID
The audit identification number assigned to road segments.
This value is not unique. It can be duplicated in certain situations.
Type: char

AuditRd_QM
This variable indicates whether or not the road segment lies within a participant's quarter-mile neighborhood. There are three possible values:
* Yes - The segment is within a neighborhood
* No - The segment is not within a neighborhood
* Disp - The segment was initially part of an audit neighborhood, but after data edits, was no longer part of a neighborhood

Type: char

DUPREAS
This variable indicates if the segment's AuditID was duplicated in one of more additional segments. There are many different possible values:
* 1 - Segments were combined during the audit by Lynne or Carrie
* 2 - Original segment was split by an extended segment
* 3 - Original segment was split by a new road segment
* 4 - Apartment complex, trailer park, etc.
* 5 - Pseudo-node separating segments with different street names
* 6 - New segments added with GPS were merged with existing audit segment
* 7 - New segments added in GIS from audit comments were merged with existing audit segment
* 8 - Multipart segment was split into single-part segments
* 9 - All segments were added with GPS; only 1 AuditID was assigned
* 10 - All segments were added in GIS from audit comments; only 1 AuditID was assigned
* 13 - Combination of cases 1 and 3
* 17 - Combination of cases 1 and 7
* 18 - Combination of cases 1 and 8
* 98 - Reason unknown
* 99 - No duplicate

INDCTR
A value that indicates if the segment was rated. There are three possible values:
* 1 - The segment was audited
* 5 - Was to have been rated in Summer 2006, but was not rated
* 99 - The segment was not audited

Type: num

Link_ID
A unique identifier for each road segment.
Type: num

UniqueID
A unique ID for each participant. It is a combination of the POSTID, PATID and Location ID. The first four digits are the POSTID. If the POSTID is **0**, that indicates that the participant is not part of the PIN Postpartum project. The next five digits are the PATID. The final one or two characters indicate the participant's temporal location. **P** indicates the location during pregnancy. All P locations were geocoded and hand-corrected. **3M** indicates the location at the 3-month interview. **12M** indicates the location at the 12-month interview. All 3M and 12M locations were GPS'ed and hand-corrected.
Type: char

PIN POSTPARTUM NAMING CONVENTION – DERIVED VARIABLE NAME SCHEME

	CHARACTER>	**1-2**	**3**	**4**	**5-8**	**1-8**
FILE	**DESCRIPTION>**	**SOURCE**	**LEVEL**	**TYPE**	**DES C**	**VARNAME**
DENSITY		DS	Q, 1	E, N		DSQE____ DSQN____ DS1E____ DS1N____
HILLINESS		HL	Q, 1	E, N		HLQE____ HLQN____ HL1E____ HL1N____
TRANSIT		TR	Q, 1, _	E, N, _		TRQE____ TRQN____ TR1E____ TR1N____ TR_E____ TR_N____ TR_____
LAND USE		LU	Q, 1, _	E, N		LUQE____ LUQN____ LU1E____ LU1N____ LU_E____ LU_N____
STREET PATTERN		SP	Q, 1	E, N		SPQE____ SPQN____ SP1E____ SP1N____
INFRASTRUCTURE		IF	_	E, N		IF_E____ IF_N____
PA FACILITIES		PA	Q, 1, _	E, N		PAQE____ PAQN____ PA1E____ PA1N____ PA_E____ PA_N____
PARCEL		PC	S	_		PCS_____
ROAD CONNECTIVITY		RC	S	_		RCS_____
BASIC DATA		BD	Q, 1	E, N		BDQE____ BDQN____ BD1E____ BD1N____

PIN POSTPARTUM VARIABLE NAMES – ORGANIZED BY MEASURE TYPE

NOTE: Variable names listed in ***bold italics*** are component variables (e.g. total population and area as components of population density) that can be dropped from the final dataset if you decide they are not useful.

1 DENSITY	VARNAME	TYPE	UNITS
Gross population density, over non-water areas, per square mile within a ¼-mile Euclidean neighborhood.	DSQEGRPD	num	persons per sq. mile
Total population within a ¼-mile Euclidean neighborhood.	***DSQETPPD***	num	persons
Total non-water area within a ¼-mile Euclidean neighborhood.	***DSQEARPD***	num	sq. miles
Gross population density, over non-water areas, per square mile within a 1-mile Euclidean neighborhood.	DS1EGRPD	num	persons per sq. mile
Total population within a 1-mile Euclidean neighborhood.	***DS1ETPPD***	num	persons
Total non-water area within a 1-mile Euclidean neighborhood.	***DS1EARPD***	num	sq. miles
Gross population density, over non-water areas, per square mile within a ¼-mile network neighborhood.	DSQNGRPD	num	persons per sq. mile
Total population within a ¼-mile network neighborhood.	***DSQNTPPD***	num	persons
Total non-water area within a ¼-mile network neighborhood.	***DSQNARPD***	num	sq. miles
Gross population density, over non-water areas, per square mile within a 1-mile network neighborhood.	DS1NGRPD	num	persons per sq. mile
Total population within a 1-mile network neighborhood.	***DS1NTPPD***	num	persons
Total non-water area within a 1-mile network neighborhood.	***DS1NARPD***	num	sq. miles
Population density in residential parcels, within a ¼-mile Euclidean neighborhood.	DSQEPDRP	num	persons per sq. mile
Total population in residential parcels, within a ¼-mile Euclidean neighborhood.	***DSQETPRP***	num	persons
Area in residential parcels, within a ¼-mile Euclidean neighborhood.	***DSQEARRP***	num	sq. miles
Population over area in residential parcels, within a 1-mile Euclidean neighborhood.	DS1EPDRP	num	persons per sq. mile
Total population in residential parcels, within a 1-mile Euclidean neighborhood.	***DS1ETPRP***	num	persons
Area in residential parcels, within a 1-mile Euclidean neighborhood.	***DS1EARRP***	num	sq. miles
Population over area in residential parcels, within a ¼-mile network neighborhood.	DSQNPDRP	num	persons per sq. mile
Total population in residential parcels, within a ¼-mile network neighborhood.	***DSQNTPRP***	num	persons

1 DENSITY (CONTINUED)	VARNAME	TYPE	UNITS
Area in residential parcels, within a ¼-mile network neighborhood.	***DSQNARRP***	num	sq. miles
Population over area in residential parcels, within a 1-mile network neighborhood.	DS1NPDRP	num	persons per sq. mile
Total population in residential parcels, within a 1-mile network neighborhood.	***DS1NTPRP***	num	persons
Area in residential parcels, within a 1-mile network neighborhood.	***DS1NARRP***	num	sq. miles

2 HILLINESS	VARNAME	TYPE	UNITS
Total number of 100-ft road segments within a ¼-mile Euclidean neighborhood.	***HLQETNS***	num	number of segments
Total length of 100-ft road segments within a ¼-mile Euclidean neighborhood.	***HLQETLS***	num	number of segments
Total number of 100-ft road segments within a 1-mile Euclidean neighborhood.	***HL1ETNS***	num	number of segments
Total length of 100-ft road segments within a 1-mile Euclidean neighborhood.	***HL1ETLS***	num	number of segments
Total number of 100-ft road segments within a ¼-mile network neighborhood.	***HLQNTNS***	num	number of segments
Total length of 100-ft road segments within a ¼-mile network neighborhood.	***HLQNTLS***	num	number of segments
Total number of 100-ft road segments within a 1-mile network neighborhood.	***HL1NTNS***	num	number of segments
Total length of 100-ft road segments within a 1-mile network neighborhood.	***HL1NTLS***	num	number of segments
Percent of 100-ft road segment lengths within a ¼-mile Euclidean neighborhood with slope > 3%	HLQEPRS3	num	percent total length
Number of 100-ft road segments within a ¼-mile Euclidean neighborhood with slope > 3%	***HLQENS3***	num	number of segments
Length of 100-ft road segments within a ¼-mile Euclidean neighborhood with slope > 3%.	***HLQELS3***	num	number of segments
Percent of 100-ft road segment lengths within a 1-mile Euclidean neighborhood with slope > 3	HL1EPRS3	num	percent total length
Number of 100-ft road segments within a 1-mile Euclidean neighborhood with slope > 3%	***HL1ENS3***	num	number of segments
Length of 100-ft road segments within a 1-mile Euclidean neighborhood with slope > 3%.	***HL1ELS3***	num	number of segments

2 HILLINESS (CONTINUED)	**VARNAME**	**TYPE**	**UNITS**
Percent of 100-ft road segment lengths within a ¼-mile network neighborhood with slope > 3%	HLQNPRS3	num	percent total length
Number of 100-ft road segments within a ¼-mile network neighborhood with slope > 3%	***HLQNNS3***	num	number of segments
Length of 100-ft road segments within a ¼-mile network neighborhood with slope > 3%.	***HLQNLS3***	num	number of segments
Percent of 100-ft road segment lengths within a 1-mile network neighborhood with slope > 3%	HL1NPRS3	num	percent total length
Number of 100-ft road segments within a 1-mile network neighborhood with slope > 3%	***HL1NNS3***	num	number of segments
Length of 100-ft road segments within a 1-mile network neighborhood with slope > 3%.	***HL1NLS3***	num	number of segments
Percent of 100-ft road segment lengths within a ¼-mile Euclidean neighborhood with slope > 5%	HLQEPRS5	num	percent total length
Number of 100-ft road segments within a ¼-mile Euclidean neighborhood with slope > 5%	***HLQENS5***	num	number of segments
Length of 100-ft road segments within a ¼-mile Euclidean neighborhood with slope > 5%.	***HLQENL5***	num	number of segments
Percent of 100-ft road segment lengths within a 1-mile Euclidean neighborhood with slope > 5%	HL1EPRS5	num	percent total length
Number of 100-ft road segments within a 1-mile Euclidean neighborhood with slope > 5%	***HL1ENS5***	num	number of segments
Length of 100-ft road segments within a 1-mile Euclidean neighborhood with slope > 5%.	***HL1ELS5***	num	number of segments
Percent of 100-ft road segment lengths within a ¼-mile network neighborhood with slope > 5%	HLQNPRS5	num	percent total length
Number of 100-ft road segments within a ¼-mile network neighborhood with slope > 5%	***HLQNNS5***	num	number of segments
Length of 100-ft road segments within a ¼-mile network neighborhood with slope > 5%.	***HLQNLS5***	num	number of segments
Percent of 100-ft road segment lengths within a 1-mile network neighborhood with slope > 5%	HL1NPRS5	num	percent total length
Number of 100-ft road segments within a 1-mile network neighborhood with slope > 5%	***HL1NNS5***	num	number of segments
Length of 100-ft road segments within a 1-mile network neighborhood with slope > 5%.	***HL1NLS5***	num	number of segments

2 HILLINESS (CONTINUED)	VARNAME	TYPE	UNITS
Percent of 100-ft road segment lengths within a ¼-mile Euclidean neighborhood with slope > 8%	HLQEPRS8	num	percent total length
Number of 100-ft road segments within a ¼-mile Euclidean neighborhood with slope > 8%	***HLQENS8***	num	number of segments
Length of 100-ft road segments within a ¼-mile Euclidean neighborhood with slope > 8%.	***HLQELS8***	num	number of segments
Percent of 100-ft road segment lengths within a 1-mile Euclidean neighborhood with slope > 8%	HL1EPRS8	num	percent total length
Number of 100-ft road segments within a 1-mile Euclidean neighborhood with slope > 8%	***HL1ENS8***	num	number of segments
Length of 100-ft road segments within a 1-mile Euclidean neighborhood with slope > 8%.	***HL1ELS8***	num	number of segments
Percent of 100-ft road segment lengths within a ¼-mile network neighborhood with slope > 8%	HLQNPRS8	num	percent total length
Number of 100-ft road segments within a ¼-mile network neighborhood with slope > 8%	***HLQNNS8***	num	number of segments
Length of 100-ft road segments within a ¼-mile network neighborhood with slope > 8%.	***HLQNLS8***	num	number of segments
Percent of 100-ft road segment lengths within a 1-mile network neighborhood with slope > 8%	HL1NPRS8	num	percent total length
Number of 100-ft road segments within a 1-mile network neighborhood with slope > 8%	***HL1NNS8***	num	number of segments
Length of 100-ft road segments within a 1-mile network neighborhood with slope > 8%.	***HL1NLS8***	num	number of segments
Total length of all road segments with the AuditID	***HL__TLRS***	num	miles
Length of all 100' (or shorter) segments, by AuditID, with a slope > 3%.	***HL__LSS3***	num	miles
Percent of total AuditID length comprised by 100' segments with a slope > 3%.	HL__PLS3	num	percent total length
Length of all 100' (or shorter) segments, by AuditID, with a slope > 5%.	***HL__LSS5***	num	miles
Percent of total AuditID length comprised by 100' segments with a slope > 5%.	HL__PLS5	num	percent total length
Length of all 100' (or shorter) segments, by AuditID, with a slope > 8%.	***HL_LSS8***	num	miles
Percent of total AuditID length comprised by 100' segments with a slope > 8%.	HL__PLS8	num	percent total length

3 TRANSIT	VARNAME	TYPE	UNITS
Distance, Euclidean, in miles to the nearest bus stop.	TR_EDBSM	num	miles
Distance, network, in miles to the nearest bus stop.	TR_NDBSM	num	miles
Net bus stop density, per square mile, within a ¼-mile Euclidean neighborhood.	TRQEDNBS	num	bus stops per sq. mile
Total number of bus stops within a ¼-mile Euc. neighborhood.	***TRQENMBS***	num	bus stops
Total non-hydro area within a ¼-mile Euclidean neighborhood.	***TRQEARBS***	num	sq. miles
Net bus stop density, per square mile, within a 1-mile Euclidean neighborhood.	TR1EDNBS	num	bus stops per sq. mile
Total number of bus stops within a 1-mile Euc. neighborhood.	***TR1ENMBS***	num	bus stops
Total non-hydro area within a 1-mile Euclidean neighborhood.	***TR1EARBS***	num	sq. miles
Net bus stop density, per square mile, within a ¼-mile network neighborhood.	TRQNDNBS	num	bus stops per sq. mile
Total number of bus stops within a ¼-mile net. neighborhood.	***TRQNNMBS***	num	bus stops
Total non-hydro area within a ¼-mile network neighborhood.	***TRQNARBS***	num	sq. miles
Net bus stop density, per square mile, within a 1-mile network neighborhood.	TR1NDNBS	num	bus stops per sq. mile
Total number of bus stops within a 1-mile net. neighborhood.	***TR1NNMBS***	num	bus stops
Total non-hydro area within a 1-mile network neighborhood.	***TR1NARBS***	num	sq. miles
Bus stop present on road segment(s) (listed by road AuditID)	TR__BSYN	num	0 (n) or 1 (y)
Number of bus stops on the segment(s) (listed by road AuditID)	TR__BSNM	num	bus stops

4 LAND USE	VARNAME	TYPE	UNITS
Percent of ¼-mile Euclidean neighborhood in Low- or Medium-Density Residential land use parcels.	LUQEPLMR	num	percent total area
Percent of 1-mile Euclidean neighborhood in Low- or Medium-Density Residential land use parcels.	LU1EPLMR	num	percent total area
Percent of ¼-mile network neighborhood in Low- or Medium-Density Residential land use parcels.	LUQNPLMR	num	percent total area
Percent of 1-mile network neighborhood in Low- or Medium-Density Residential land use parcels.	LU1NPLMR	num	percent total area
Non-hydro area in Low- or Medium-Density Residential land use parcels within the ¼-mile Euclidean neighborhood.	***LUQEALMR***	num	sq. miles
Non-hydro area in Low- or Medium-Density Residential land use parcels within the 1-mile Euclidean neighborhood.	***LU1EALMR***	num	sq. miles

4 LAND USE (CONTINUED)	VARNAME	TYPE	UNITS
Non-hydro area in Low- or Medium-Density Residential land use parcels within the ¼-mile network neighborhood.	***LUQNALMR***	num	sq. miles
Non-hydro area in Low- or Medium-Density Residential land use parcels within the 1-mile network neighborhood.	***LU1NALMR***	num	sq. miles
Percent of ¼-mile Euclidean neighborhood in High-Density Residential land use parcels.	LUQEPHRS	num	percent total area
Percent of 1-mile Euclidean neighborhood in High-Density Residential land use parcels.	LU1EPHRS	num	percent total area
Percent of ¼-mile network neighborhood in High-Density Residential land use parcels.	LUQNPHRS	num	percent total area
Percent of 1-mile network neighborhood in High-Density Residential land use parcels.	LU1NPHRS	num	percent total area
Non-hydro area in High-Density Residential land use parcels within the ¼-mile Euclidean neighborhood.	***LUQEAHRS***	num	sq. miles
Non-hydro area in High-Density Residential land use parcels within the 1-mile Euclidean neighborhood.	***LU1EAHRS***	num	sq. miles
Non-hydro area in High-Density Residential land use parcels within the ¼-mile network neighborhood.	***LUQNAHRS***	num	sq. miles
Non-hydro area in High-Density Residential land use parcels within the 1-mile network neighborhood.	***LU1NAHRS***	num	sq. miles
Percent of ¼-mile Euclidean neighborhood in Agricultural or Industrial land use parcels.	LUQEPAGI	num	percent total area
Percent of 1-mile Euclidean neighborhood in Agricultural or Industrial land use parcels.	LU1EPAGI	num	percent total area
Percent of ¼-mile network neighborhood in Agricultural or Industrial land use parcels.	LUQNPAGI	num	percent total area
Percent of 1-mile network neighborhood in Agricultural or Industrial land use parcels.	LU1NPAGI	num	percent total area
Non-hydro area in Agricultural or Industrial land use parcels within the ¼-mile Euclidean neighborhood.	***LUQEAAGI***	num	sq. miles
Non-hydro area in Agricultural or Industrial land use parcels within the 1-mile Euclidean neighborhood.	***LU1EAAGI***	num	sq. miles
Non-hydro area in Agricultural or Industrial land use parcels within the ¼-mile network neighborhood.	***LUQNAAGI***	num	sq. miles
Non-hydro area in Agricultural or Industrial land use parcels within the 1-mile network neighborhood.	***LU1NAAGI***	num	sq. miles
Percent of ¼-mile Euclidean neighborhood in Commercial land use parcels.	LUQEPCOM	num	percent total area

4 LAND USE (CONTINUED)	VARNAME	TYPE	UNITS
Percent of 1-mile Euclidean neighborhood in Commercial land use parcels.	LU1EPCOM	num	percent total area
Percent of ¼-mile network neighborhood in Commercial land use parcels.	LUQNPCOM	num	percent total area
Percent of 1-mile network neighborhood in Commercial land use parcels.	LU1NPCOM	num	percent total area
Non-hydro area in Commercial land use parcels within the ¼-mile Euclidean neighborhood.	***LUQEACOM***	num	sq. miles
Non-hydro area in Commercial land use parcels within the 1-mile Euclidean neighborhood.	***LU1EACOM***	num	sq. miles
Non-hydro area in Commercial land use parcels within the ¼-mile network neighborhood.	***LUQNACOM***	num	sq. miles
Non-hydro area in Commercial land use parcels within the 1-mile network neighborhood.	***LU1NACOM***	num	sq. miles
Percent of ¼-mile Euclidean neighborhood in Office land use parcels.	LUQEPOFC	num	percent total area
Percent of 1-mile Euclidean neighborhood in Office land use parcels.	LU1EPOFC	num	percent total area
Percent of ¼-mile network neighborhood in Office land use parcels.	LUQNPOFC	num	percent total area
Percent of 1-mile network neighborhood in Office land use parcels.	LU1NPOFC	num	percent total area
Non-hydro area in Office land use parcels within the ¼-mile Euclidean neighborhood.	***LUQEAOFC***	num	sq. miles
Non-hydro area in Office land use parcels within the 1-mile Euclidean neighborhood.	***LU1EAOFC***	num	sq. miles
Non-hydro area in Office land use parcels within the ¼-mile network neighborhood.	***LUQNAOFC***	num	sq. miles
Non-hydro area in Office land use parcels within the 1-mile network neighborhood.	***LU1NAOFC***	num	sq. miles
Percent of ¼-mile Euclidean neighborhood in Institutional land use parcels.	LUQEPINL	num	percent total area
Percent of 1-mile Euclidean neighborhood in Institutional land use parcels.	LU1EPINL	num	percent total area
Percent of ¼-mile network neighborhood in Institutional land use parcels.	LUQNPINL	num	percent total area
Percent of 1-mile network neighborhood in Institutional land use parcels.	LU1NPINL	num	percent total area

4 LAND USE (CONTINUED)	VARNAME	TYPE	UNITS
Non-hydro area in Institutional land use parcels within the ¼-mile Euclidean neighborhood.	***LUQEAINL***	num	sq. miles
Non-hydro area in Institutional land use parcels within the 1-mile Euclidean neighborhood.	***LU1EAINL***	num	sq. miles
Non-hydro area in Institutional land use parcels within the ¼-mile network neighborhood.	***LUQNAINL***	num	sq. miles
Non-hydro area in Institutional land use parcels within the 1-mile network neighborhood.	***LU1NAINL***	num	sq. miles
Percent of ¼-mile Euclidean neighborhood in Park or Open Space land use parcels.	LUQEPPOS	num	percent total area
Percent of 1-mile Euclidean neighborhood in Park or Open Space land use parcels.	LU1EPPOS	num	percent total area
Percent of ¼-mile network neighborhood in Park or Open Space land use parcels.	LUQNPPOS	num	percent total area
Percent of 1-mile network neighborhood in Park or Open Space land use parcels.	LU1NPPOS	num	percent total area
Non-hydro area in Park or Open Space land use parcels within the ¼-mile Euclidean neighborhood.	***LUQEAPOS***	num	sq. miles
Non-hydro area in Park or Open Space land use parcels within the 1-mile Euclidean neighborhood.	***LU1EAPOS***	num	sq. miles
Non-hydro area in Park or Open Space land use parcels within the ¼-mile network neighborhood.	***LUQNAPOS***	num	sq. miles
Non-hydro area in Park or Open Space land use parcels within the 1-mile network neighborhood.	***LU1NAPOS***	num	sq. miles
Percent of ¼-mile Euclidean neighborhood in Other land use parcels.	LUQEPOTR	num	percent total area
Percent of 1-mile Euclidean neighborhood in Other land use parcels.	LU1EPOTR	num	percent total area
Percent of ¼-mile network neighborhood in Other land use parcels.	LUQNPOTR	num	percent total area
Percent of 1-mile network neighborhood in Other land use parcels.	LU1NPOTR	num	percent total area
Non-hydro area in Other land use parcels within the ¼-mile Euclidean neighborhood.	***LUQEAOTR***	num	sq. miles
Non-hydro area in Other land use parcels within the 1-mile Euclidean neighborhood.	***LU1EAOTR***	num	sq. miles
Non-hydro area in Other land use parcels within the ¼-mile network neighborhood.	***LUQNAOTR***	num	sq. miles

4 LAND USE (CONTINUED)	VARNAME	TYPE	UNITS
Non-hydro area in Other land use parcels within the 1-mile network neighborhood.	***LU1NAOTR***	num	sq. miles
Total area of the ¼-mile Euclidean neighborhood containing all land uses.	***LUQETOTA***	num	sq. miles
Total area of the 1-mile Euclidean neighborhood containing all land uses.	***LU1ETOTA***	num	sq. miles
Total area of the ¼-mile network neighborhood containing all land uses.	***LUQNTOTA***	num	sq. miles
Total area of the 1-mile network neighborhood containing all land uses.	***LU1NTOTA***	num	sq. miles
Distance, Euclidean, in miles to the nearest park.	LU_EDPRK	num	miles
Name of nearest park, Euclidean.	LU_ENPRK	char	NA
ID of nearest park, Euclidean	LU_EIDPK	num	NA
Distance, network, in miles to the nearest park.	LU_NDPRK	num	miles
Name of nearest park, network.	LU_NNPRK	char	NA
ID of nearest park, network	LU_NIDPK	num	NA
Distance, Euclidean, in miles to the nearest commercial parcel.	LU_EDCOM	num	miles
Distance, network, in miles to the nearest commercial parcel.	LU_NDCOM	num	miles
Gravity measure to Commercial land use, with inverse distance function, using a ¼-mile Euclidean neighborhood.	LUQEGRAV	num	NA
Gravity measure to Commercial land use, with inverse distance function, using a 1-mile Euclidean neighborhood.	LU1EGRAV	num	NA
Gravity measure to Commercial land use, with inverse distance function, using a ¼-mile network neighborhood.	LUQNGRAV	num	NA
Gravity measure to Commercial land use, with inverse distance function, using a 1-mile network neighborhood.	LU1NGRAV	num	NA
Herfindahl index for residential and commercial land use, using a ¼-mile Euclidean neighborhood.	LUQEHRCM	num	NA
Herfindahl index for residential and commercial land use, using a 1-mile Euclidean neighborhood.	LU1EHRCM	num	NA
Herfindahl index for residential and commercial land use, using a ¼-mile network neighborhood.	LUQNHRCM	num	NA
Herfindahl index for residential and commercial land use, using a 1-mile network neighborhood.	LU1NHRCM	num	NA
Herfindahl index for residential, commercial and park/open space land use, using a ¼-mile Euclidean neighborhood.	LUQEHRCP	num	NA

4 LAND USE (CONTINUED)	VARNAME	TYPE	UNITS
Herfindahl index for residential, commercial and park/open space land use, using a 1-mile Euclidean neighborhood.	LU1EHRCP	num	NA
Herfindahl index for residential, commercial and park/open space land use, using a ¼-mile network neighborhood.	LUQNHRCP	num	NA
Herfindahl index for residential, commercial and park/open space land use, using a 1-mile network neighborhood.	LU1NHRCP	num	NA
Entropy measure for residential and commercial land use, using a ¼-mile Euclidean neighborhood.	LUQEERCM	num	NA
Entropy measure for residential and commercial land use, using a 1-mile Euclidean neighborhood.	LU1EERCM	num	NA
Entropy measure for residential and commercial land use, using a ¼-mile network neighborhood.	LUQNERCM	num	NA
Entropy measure for residential and commercial land use, using a 1-mile network neighborhood.	LU1NERCM	num	NA
Entropy measure for residential, commercial and park/open space land use, using a ¼-mile Euclidean neighborhood.	LUQEERCP	num	NA
Entropy measure for residential, commercial and park/open space land use, using a 1-mile Euclidean neighborhood.	LU1EERCP	num	NA
Entropy measure for residential, commercial and park/open space land use, using a ¼-mile network neighborhood.	LUQNERCP	num	NA
Entropy measure for residential, commercial and park/open space land use, using a 1-mile network neighborhood.	LU1NERCP	num	NA
DUMMY FLAG: Indicates that the respondents may not have valid results due to parcel omission due to a constricted network neighborhood polygon.	FLGPOCNP	num	0, 1

5 STREET PATTERN	VARNAME	TYPE	UNITS
Road density (miles per square mile) within a ¼-mile Euclidean neighborhood. Excludes Interstates, Access Ramps, NC Highways, and US Highways.	SPQEDNRD	num	miles per square mile
Total road length within a ¼-mile Euclidean neighborhood. Excludes Interstates, Access Ramps, NC Highways, and US Highways.	***SPQELNRD***	num	miles
Total non-water area within a ¼-mile Euclidean neighborhood.	***SPQEARRD***	num	sq. miles
Road density (miles per square mile) within a 1-mile Euclidean neighborhood. Excludes Interstates, Access Ramps, NC Highways, and US Highways.	SPQNDNRD	num	miles per square mile
Total road length within a 1-mile Euclidean neighborhood. Excludes Interstates, Access Ramps, NC Highways, and US Highways.	***SP1ELNRD***	num	miles

5 STREET PATTERN (CONTINUED)	VARNAME	TYPE	UNITS
Total non-water area within a 1-mile Euclidean neighborhood.	***SP1EARRD***	num	sq. miles
Road density (miles per square mile) within a ¼-mile network neighborhood. Excludes Interstates, Access Ramps, NC Highways, and US Highways.	SP1EDNRD	num	miles per square mile
Total road length within a ¼-mile network neighborhood. Excludes Interstates, Access Ramps, NC Highways, and US Highways.	***SPQNLNRD***	num	miles
Total non-water area within a ¼-mile network neighborhood.	***SPQNARRD***	num	sq. miles
Road density (miles per square mile) within a 1-mile network neighborhood. Excludes Interstates, Access Ramps, NC Highways, and US Highways.	SP1NDNRD	num	miles per square mile
Total road length within a 1-mile network neighborhood. Excludes Interstates, Access Ramps, NC Highways, and US Highways.	***SP1NLNRD***	num	miles
Total non-water area within a 1-mile network neighborhood.	***SP1NARRD***	num	sq. miles
Major road density (miles per square mile) within a ¼-mile Euclidean neighborhood. Includes only Interstates, NC Highways, and US Highways.	SPQEDNMR	num	miles per square mile
Total major road length within a ¼-mile Euclidean neighborhood. Includes only Interstates, NC Highways, and US Highways.	***SPQELNMR***	num	miles
Total non-water area within a ¼-mile Euclidean neighborhood.	***SPQEARMR***	num	sq. miles
Major road density (miles per square mile) within a 1-mile Euclidean neighborhood. Includes only Interstates, NC Highways, and US Highways.	SPQNDNMR	num	miles per square mile
Total non-water area within a 1-mile Euclidean neighborhood.	***SP1EARMR***	num	sq. miles
Major road density (miles per square mile) within a ¼-mile network neighborhood. Includes only Interstates, NC Highways, and US Highways.	SP1EDNMR	num	miles per square mile
Total major road length within a ¼-mile network neighborhood. Includes only Interstates, NC Highways, and US Highways.	***SPQNLNMR***	num	miles
Total non-water area within a ¼-mile network neighborhood.	***SPQNARMR***	num	sq. miles
Major road density (miles per square mile) within a 1-mile network neighborhood. Includes only Interstates, NC Highways, and US Highways.	SP1NDNMR	num	miles per square mile
Total major road length within a 1-mile network neighborhood. Includes only Interstates, NC Highways, and US Highways.	***SP1NLNMR***	num	miles
Total non-water area within a 1-mile network neighborhood.	***SP1NARMR***	num	sq. miles
Density of 3-way intersections, per sq. mile, within a ¼-mile Euclidean neighborhood.	SPQED3WI	num	intersections per sq. mile

5 STREET PATTERN (CONTINUED)	VARNAME	TYPE	UNITS
Total number of 3-way intersections within a ¼-mile Euclidean neighborhood.	***SPQEN3WI***	num	intersections
Density of 4-way intersections, per sq. mile, within a ¼-mile Euclidean neighborhood.	SPQED4WI	num	intersections per sq. mile
Total number of 4-way intersections within a ¼-mile Euclidean neighborhood.	***SPQEN4WI***	num	intersections
Density of 3- and 4-way intersections, per sq. mile, within a ¼-mile Euclidean neighborhood.	SPQED34W	num	intersections per sq. mile
Total number of 3- and 4-way intersections within a ¼-mile Euclidean neighborhood.	***SPQEN34W***	num	intersections
Total area within a ¼-mile Euclidean neighborhood.	***SPQEAR34***	num	sq. miles
Density of 3-way intersections, per sq. mile, within a 1-mile Euclidean neighborhood.	SP1ED3WI	num	intersections per sq. mile
Total number of 3-way intersections within a 1-mile Euclidean neighborhood.	***SP1EN3WI***	num	intersections
Density of 4-way intersections, per sq. mile, within a 1-mile Euclidean neighborhood.	SP1ED4WI	num	intersections per sq. mile
Total number of 4-way intersections within a 1-mile Euclidean neighborhood.	***SP1EN4WI***	num	intersections
Density of 3- and 4-way intersections, per sq. mile, within a 1-mile Euclidean neighborhood.	SP1ED34W	num	intersections per sq. mile
Total number of 3- and 4-way intersections within a 1-mile Euclidean neighborhood.	***SP1EN34W***	num	intersections
Total area within a 1-mile Euclidean neighborhood.	***SP1EAR34***	num	sq. miles
Density of 3-way intersections, per sq. mile, within a ¼-mile network neighborhood.	SPQND3WI	num	intersections per sq. mile
Total number of 3-way intersections within a ¼-mile network neighborhood.	***SPQNN3WI***	num	intersections
Density of 4-way intersections, per sq. mile, within a ¼-mile network neighborhood.	SPQND4WI	num	intersections per sq. mile
Total number of 4-way intersections within a ¼-mile network neighborhood.	***SPQNN4WI***	num	intersections
Density of 3- and 4-way intersections, per sq. mile, within a ¼-mile network neighborhood.	SPQND34W	num	intersections per sq. mile
Total number of 3- and 4-way intersections within a ¼-mile network neighborhood.	***SPQNN34W***	num	intersections
Total area within a ¼-mile network neighborhood.	***SPQNAR34***	num	sq. miles

5 STREET PATTERN (CONTINUED)	VARNAME	TYPE	UNITS
Density of 3-way intersections, per sq. mile, within a 1-mile network neighborhood.	SP1ND3WI	num	intersections per sq. mile
Total number of 3-way intersections within a 1-mile network neighborhood.	***SP1NN3WI***	num	intersections
Density of 4-way intersections, per sq. mile, within a 1-mile network neighborhood.	SP1ND4WI	num	intersections per sq. mile
Total number of 4-way intersections within a 1-mile network neighborhood.	***SP1NN4WI***	num	intersections
Density of 3- and 4-way intersections, per sq. mile, within a 1-mile network neighborhood.	SP1ND34W	num	intersections per sq. mile
Total number of 3- and 4-way intersections within a 1-mile network neighborhood.	***SP1NN34W***	num	intersections
Total area within a 1-mile network neighborhood.	***SP1NAR34***	num	sq. miles
Total number of links (i.e. road segments) within a ¼-mile Euclidean neighborhood.	***SPQENLNK***	num	segments or links
Total number of nodes (i.e. intersections) within a ¼-mile Euclidean neighborhood.	***SPQENNDE***	num	intersections or nodes
Proximity Gamma Index for ¼-mile Euclidean neighborhoods.	SPQEPGIX	num	N/A
Total number of links (i.e. road segments) within a 1-mile Euclidean neighborhood.	***SP1ENLNK***	num	segments or links
Total number of nodes (i.e. intersections) within a 1-mile Euclidean neighborhood.	***SP1ENNDE***	num	intersections or nodes
Proximity Gamma Index for 1-mile Euclidean neighborhoods.	SP1EPGIX	num	N/A
Total number of links (i.e. road segments) within a ¼-mile network neighborhood.	***SPQNNLNK***	num	segments or links
Total number of nodes (i.e. intersections) within a ¼-mile network neighborhood.	***SPQNNNDE***	num	intersections or nodes
Proximity Gamma Index for ¼-mile network neighborhoods.	SPQNPGIX	num	N/A
Total number of links (i.e. road segments) within a 1-mile network neighborhood.	***SP1NNLNK***	num	segments or links
Total number of nodes (i.e. intersections) within a 1-mile network neighborhood.	***SP1NNNDE***	num	intersections or nodes
Proximity Gamma Index for 1-mile network neighborhoods.	SP1NPGIX	num	N/A

6 INFRASTRUCTURE NUISANCE	VARNAME	TYPE	UNITS
Distance, Euclidean, in miles to the nearest Interstate.	IF_EDINT	num	miles
Distance, network, in miles to the nearest Interstate.	IF_NDINT	num	miles
Distance, Euclidean, in miles to the nearest major road (Interstate, NC Hwy, US Hwy).	IF_EDMJR	num	miles
Distance, network, in miles to the nearest major road (Interstate, NC Hwy, US Hwy).	IF_NDMJR	num	miles

7 PA FACILITIES	VARNAME	TYPE	UNITS
Distance, Euclidean, in miles to the nearest PA facility.	PA_EDPAF	num	miles
Distance, network, in miles to the nearest PA facility.	PA_NDPAF	num	miles
Gravity measure to recreational facilities, with inverse distance function, using a ¼-mile Euclidean neighborhood.	PAQEGRRF	num	NA
Gravity measure to recreational facilities, with inverse distance function, using a 1-mile Euclidean neighborhood.	PA1EGRRF	num	NA
Gravity measure to recreational facilities, with inverse distance function, using a ¼-mile network neighborhood.	PAQNGRRF	num	NA
Gravity measure to recreational facilities, with inverse distance function, using a 1-mile network neighborhood.	PA1NGRRF	num	NA
Gravity measure to parks and recreational facilities, with inverse distance function, weighted by recreational opportunities, using a ¼-mile Euclidean neighborhood.	PAQEGRPR	num	NA
Gravity measure to parks and recreational facilities, with inverse distance function, weighted by recreational opportunities, using a 1-mile Euclidean neighborhood.	PA1EGRPR	num	NA
Gravity measure to parks and recreational facilities, with inverse distance function, weighted by recreational opportunities, using a ¼-mile network neighborhood.	PAQNGRPR	num	NA
Gravity measure to parks and recreational facilities, with inverse distance function, weighted by recreational opportunities, using a 1-mile network neighborhood.	PA1NGRPR	num	NA

8 PARCEL	VARNAME	TYPE	UNITS
Number of parcels assigned to the road segment.	PCS_NMPC	num	parcels
Mean parcel size, in square feet, of the parcels along the road segment.	PCS_MNPS	num	square feet
Mean tax value, in US dollars, of all parcels along the road segment.	PCS_MNTV	num	US dollars

8 PARCEL (CONTINUED)	**VARNAME**	**TYPE**	**UNITS**
Median tax value, in US dollars, of all parcels along the road segment.	PCS_MDTV	num	US dollars
Summed tax value, in US dollars, of all parcels along the road segment.	PCS_SMTV	num	US dollars

9 ROAD CONNECTIVITY			
List (semicolon-delimited) of connecting road segments.	RCS_SEGS	char	NA

10 BASIC DATA	**VARNAME**	**TYPE**	**UNITS**
DUMMY FLAG: Indicates that the respondent's ¼-mile Euclidean neighborhood falls partially outside of the study area.	FLGQEOUT	num	0, 1
Percentage of area of ¼-mile Euclidean neighborhood contained within the four-county study area.	BDQEPASA	num	percentage
DUMMY FLAG: Indicates that the respondent's 1-mile Euclidean neighborhood falls partially outside of the study area.	FLG1EOUT	num	0, 1
Percentage of area of 1-mile Euclidean neighborhood contained within the four-county study area.	BD1EPASA	num	percentage
DUMMY FLAG: Indicates that the respondent's ¼-mile network neighborhood falls partially outside of the study area.	FLGQNOUT	num	0, 1
Percentage of area of ¼-mile network neighborhood contained within the four-county study area.	BDQNPASA	num	percentage
DUMMY FLAG: Indicates that the respondent's 1-mile network neighborhood falls partially outside of the study area.	FLG1NOUT	num	0, 1
Percentage of area of 1-mile network neighborhood contained within the four-county study area.	BD1NPASA	num	percentage
Area, in square miles, of each respondent's ¼-mile Euclidean neighborhood.	BDQEAREA	num	square miles
Area, in square miles, of each respondent's 1-mile Euclidean neighborhood.	BD1EAREA	num	square miles
Area, in square miles, of each respondent's ¼-mile network neighborhood.	BDQNAREA	num	square miles
Area, in square miles, of each respondent's 1-mile network neighborhood.	BD1NAREA	num	square miles
Area, in square miles, of hydrographic (water) features in each respondent's ¼-mile Euclidean neighborhood.	BDQEHYDR	num	square miles

10	BASIC DATA (CONTINUED)	VARNAME	TYPE	UNITS
	Area, in square miles, of hydrographic (water) features in each respondent's 1-mile Euclidean neighborhood.	BD1EHYDR	num	square miles
	Area, in square miles, of hydrographic (water) features in each respondent's ¼-mile network neighborhood.	BDQNHYDR	num	square miles
	Area, in square miles, of hydrographic (water) features in each respondent's 1-mile network neighborhood.	BD1NHYDR	num	square miles

Appendix III: Participant Location Notes

The key dataset in this project is the **PinPost Participant Locations** point feature class. This dataset contains the locations for all PIN Postpartum and PIN3 respondents within the four-county study area of Alamance, Chatham, Durham and Orange.

NOTE: *The descriptions of dataset creation and cleaning in this Appendix are a generalized overview. Due to multiple stages of location inclusion, cleaning, and re-cleaning, the steps are not necessarily in the order that they occurred.*

Source Data Overview

The locations were obtained from three sources: geocoded addresses, coordinates collected with GPS receivers, and manual placement of points in ArcGIS.

The source data for all PIN3 locations, which are the places where the participants lived during pregnancy when they participated in the PIN3 study, are geocoded addresses. The addresses were sent to GDT (now TeleAtlas) and a file of latitude and longitude coordinates were returned.

The source for most PIN Postpartum locations, which are the places where the participants lived after birth when they participated in the 3-month and/or 12-month follow-up visits, are GPS coordinates. Project interviewers used Garmin 12XL receivers to collect coordinates at the location where they interviewed the participants.

The third source, manual placement, was performed in the Spatial Analysis Unit for any locations for which we had an address, but no geocoded or GPS location was available. In these cases, the address was looked up in a variety of sources to locate its position. These sources included, in the order of preference,

1. Project tax parcel datasets
2. Online county tax parcel mapping websites
3. Google Maps
4. Google Earth
5. USPS website (for checking if the address existed and/or was deliverable)

If all of these sources failed to identify a location for the address, it was removed from the database. Otherwise, the results of the search yielded a location, and a point was placed in that location in ArcMap.

For situations where the location in the dataset did not match the address, the locations were hand corrected, which is described below.

Creation of the PinPost Participant Location Dataset

The initial step in the development of the location dataset was the importation and cleaning of the geocoded PIN3 addresses and the Postpartum GPS locations. A large amount of time was spent to verify that the IDs associated with each location were correct, and that no duplicate locations existed. Any locations that fell outside of the study area were checked to make sure that they were not erroneously placed and belonged inside the study area, and then were deleted if their locations were correct.

Over the course of the project, locations were continuously added to the dataset. This occurred primarily because 12-month postpartum visits were ongoing during the study, and periodic downloads of GPS points took place 2 or 3 times per year. Those new points were vetted for accuracy and inclusion in the study area, and then were added to the dataset. A second reason for the adding of locations was the decision in early 2006 to add PIN3 locations of women who were not in the Postpartum study to the dataset. The dataset increased from an original *n* of 435 locations to a final *n* of 2,444 locations representing 1,491 participants.

The original dataset only contained one point per unique location, so if a participant never moved between pregnancy and the 12-month visit, she only had one location. Later on that changed so that in the final version, the dataset has one point per location, regardless of mover status. So whereas a participant that moved twice will have points in three different places, a participant who never moved will have three points all in the same location. To make this change, a complex set of criteria were established for checking all points and marking some for duplication. That flowchart can be seen in Figure III-1 below.

Hand Correction of Locations

After the initial version of the dataset was created, all locations were checked for spatial accuracy and hand-corrected when necessary. Participant locations were overlaid in ArcMap with a number of different contextual datasets, including tax parcels, roads and aerial photographs. In addition, websites such as Google Maps, Google Earth and each county's online tax parcel mapping database were used for location verification.

The requirements for accurate placement were that that 1) the point must be located on the actual tax parcel matching the participant's address, and 2) the point must be within 50 feet of the road. If zero or one of those requirements were fulfilled, then the point was manually moved in ArcMap until the requirements were met. While it was preferred that the point be placed on the driveway (when visible), this did not always occur and should not affect the accuracy of analytical results.

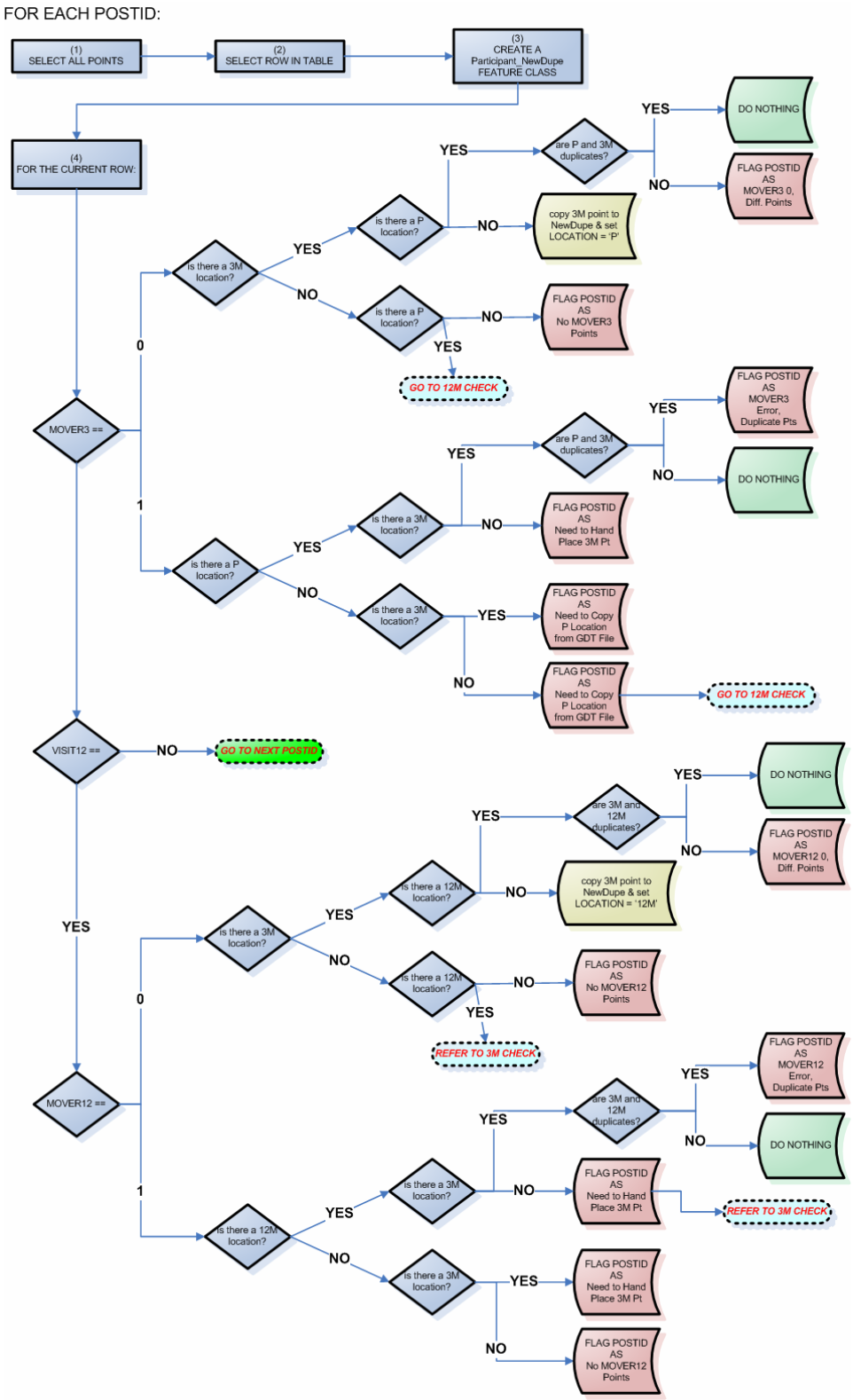


Figure III-1: Flowchart for Updating of Participant Location Dataset

Additional Information

Below are included a number of old documents describing information relevant to the participant location data. Documentation that contains information that could reveal respondent addresses is not included.

Results of Test on Geocoded PIN3 Addresses From GDT

25 February 2005
\Data\GDT\Results of GDT Geocoding.doc

Total Number of Points from GDT:	**1587**	
Number of Points within 5 Study Counties:	**1398**	(**88.09%** of total)
Number of Points where GDT-Assigned Blockgroup # Matches Blockgroup Spatial Data	**1374**	(**98.28%** w/in 5 counties) (**86.58%** of total)
Number of Points where GDT-Assigned Tract # Matches Tract Spatial Data	**1383**	(**98.93%** w/in 5 counties) (**87.15%** of total)

Blockgroup Mismatches

Of those **24** points within the five-county study area that did not have matching Blockgroup numbers:

- Alamance – 4 points
  - Min. distance from GDT-assigned BG: **0.14 feet**
  - Max. distance from GDT-assigned BG: **30.8 feet**
- Chatham – 4 points
  - Min. distance from GDT-assigned BG: **0.08 feet**
  - Max. distance from GDT-assigned BG: **7.3 feet**
- Durham – 4 points
  - Min. distance from GDT-assigned BG: **0.46 feet**
  - Max. distance from GDT-assigned BG: **8.4 feet**
  - Two locations had the same address and same coordinates
- Orange – 10 points
  - Min. distance from GDT-assigned BG: **0.12 feet**
  - Max. distance from GDT-assigned BG: **4.2 feet**
  - Two locations had the same address and same coordinates
  - Five locations had different addresses and the same coordinates
    - The location does **not** appear to be a zip code centroid
- Wake – 2 points
  - Min. distance from GDT-assigned BG: **0.85 feet**
  - Max. distance from GDT-assigned BG: **2.0 feet**

Tract Mismatches

Of those **15** points within the five-county study area that did not have matching Tract numbers:

- All 15 are included in the Blockgroup Mismatch set
- Alamance – 2 points
  - Min. distance from GDT-assigned Tract: **1.55 feet**
  - Max. distance from GDT-assigned Tract: **30.8 feet**
- Chatham – 1 point
  - Min. distance from GDT-assigned Tract: **7.3 feet**
  - Max. distance from GDT-assigned Tract: **7.3 feet**
- Durham – 0 points
- Orange – 10 points
  - Min. distance from GDT-assigned Tract: **0.12 feet**
  - Max. distance from GDT-assigned Tract: **4.2 feet**
  - Two locations had the same address and same coordinates
  - Five locations had different addresses and the same coordinates
    - The location does **not** appear to be a zip code centroid
- Wake – 2 points
  - Min. distance from GDT-assigned Tract: **0.85 feet**
  - Max. distance from GDT-assigned Tract: **2.0 feet**

Report on New PinPost Locations

30 June 2005
\Documents\Reports\Report on New PinPost Locations – 30 June 2005.doc

New GPS points were downloaded on June 28, 2005. These points were collected between March 11, 2005, and June 27, 2005.
New addresses were geocoded by GDT and returned to CPC on June 29, 2005.
Prior to the addition of these two data sets, there were **435** locations for PinPost women in our database for the four-county study area.

GPS Data

There are **56** new GPS locations since the previous download on March 10, 2005, **46** of which are in the study area. Of those **46**:

- 13 are matches with locations already in our database
  - 11 were previously geocoded locations
    - 10 are roughly the same location as the geocoded point
    - 1 is a new location (the woman moved)
  - 2 were previously GPS points
    - 1 is in a new location
    - 1 is in the same location
    - both are listed as having moved
- 17 have matching points in the new GDT geocoded file (match on POSTID)
- 16 are new locations

Road segments were selected within ¼-mile of the 46 new GPS locations that are in the study area. Statistics of these segments are below:

- Total Road Segments: 1357
- Total Road Length: 737,942 ft (139.76 miles)
- Number of Segments to Add to Audit: 229 (1 segment was done in training)
- Road Length to Add to Audit: 159,739 ft (30.25 miles)

These new road segments are scattered throughout all four counties.

GDT Geocoded Data Summary

There were **251** new PIN3 addresses geocoded by GDT. These new locations are attributed with a new PP_CODE value which indicates each woman's participation or eligibility status. The points are distributed in the following way. The numbers in parentheses indicate the number of points in each category that are located in the four-county study area:

- Recruited into Postpartum Study **46** (**38**)
- Eligible, but Not Recruited **80** (**64**)
- May Become Eligible **30** (**23**)
- Refused to Participate in Postpartum **22** (**16**)
- Not Eligible **73** (**56**)

The first three categories are those that will be used to calculate new potential road segments for the audit. In these three categories, there are a total of **125** new locations.

Recruited into Postpartum Study

Of the **46** women in the Postpartum study, only **38** are located within the study area. Of those **38**:

- None are matches with locations already in our database
- 17 have matching points in the new GPS file (match on POSTID)
- 21 are new locations

Road segments were selected within ¼-mile of the 38 new geocoded locations that are in the study area. Statistics of these segments are below:

- Total Road Segments: 1080
- Total Road Length: 620,808 ft (117.58 miles)
- Number of Segments to Add to Audit: 350 (2 segments were done in training)
- Road Length to Add to Audit: 257,048 ft (48.68 miles)

Eligible, but Not Recruited

Of the **80** women in the Postpartum study, only **64** are located within the study area. Road segments were selected within ¼-mile of these 64 locations. Statistics of these segments are below:

- Total Road Segments: 1378
- Total Road Length: 894,724 ft (169.46 miles)
- Number of Segments to Add to Audit: 485 (18 segments were done in training)
- Road Length to Add to Audit: 391,245 ft (74.10 miles)

May Become Eligible

Of the **30** women in the Postpartum study, only **23** are located within the study area. Road segments were selected within ¼-mile of these 23 locations. Statistics of these segments are below:

- Total Road Segments: 600
- Total Road Length: 332,446 ft (62.96 miles)
- Number of Segments to Add to Audit: 254 (2 segments were done in training)
- Road Length to Add to Audit: 144,242 ft (27.32 miles)

All Three Categories

Here are the road segment statistics for the **125** locations in all three categories:

- Total Road Segments: 2804
- Total Road Length: 1,731,817 ft (328.00 miles)
- Number of Segments to Add to Audit: 1083 (22 segments were done in training)
- Road Length to Add to Audit: 788,597 ft (149.36 miles)

Combined Data Summary

The GPS points were combined with the GDT points for those women participating in the study, all duplicates were removed (GPS points were given precedence over geocoded points), and the one new location was added. This resulted in **66** locations being added to the previous dataset, although **10** of these points replaced prior geocoded points. This brings the total number of women's locations in the study area to **491**.

Changes in road segments due to the shifted locations of the **10** points where we replaced a geocoded location with a GPS point:

- Only **2** new segments were added to the audit, with a total length of 5774 ft, or 1.09 miles

Road segments were selected within ¼-mile of the **56** new locations, and any new segments that were not already part of the audit were added to the audit. Statistics of these segments are below:

- Number of Segments Added to Audit: 368 (1 segment was done in training)
- Road Length Added to Audit: 273,595 ft (51.82 miles)

After adding the new road segments to the audit, road segments were selected within ¼-mile of the **87** locations of those women who are Eligible or Maybe Eligible. Statistics of these segments are below:

- Total Road Segments: 1905
- Total Road Length: 1,187,799 ft (224.96 miles)
- Num. of Segments Not Currently in Audit: 727 (20 segments were done in training)
- Road Length Not Currently in Audit: 528,793 ft (100.15 miles)

Status Report - Participant Data

14 December 2005
\Documents\Reports\Status Report - Road and Participant Data.doc

Participant Data
As of this date, we have **547** locations in the participant data set. These have been broken down into several categories:

- **537** unique PIN3 IDs (PATID)
- **10** women with two locations
- **32** women with missing PinPost IDs
- **6** women with a 12-month location but no 3-month location
- **5** women whose location is too far from a road because their roads do not exist in our data

- **98** *geocoded* 3-month locations
- **434** *GPS'ed* 3-month locations
- **15** *GPS'ed* 12-month locations

- **428** with complete neighborhoods (meaning all segments within ¼-mile exist in the data set)
- **23** with definite incomplete neighborhoods
- **96** with possible incomplete neighborhoods

- **168** with missing delivery dates
- **413** with missing visit dates

Summary of Audit Segments for PIN Women

26 September 2007
\Documents\Reports\PIN_study_location_Summary_2007September26_FmMolly.doc

SECTION I
Molly Wen

A) There are totally n=2006 women enrolled into PIN studies, where n=2006 in PIN3, n=688 in 3-month postpartum and n=550 in 12-month postpartum. Spatial data information is summarized based on the neighborhood data:
   1) Among n=2006 PIN3 women, there are 1484 who have their location coded successfully.
   2) Among n=688 3-month Postpartum women, there are 543 who have their location coded successfully.
   3) Among n=550 12-month Postpartum women, there are 417 who have their location coded successfully.

B) If based on "pinpost_participants_ncsu.xls" that I got from the project space at CPC, detailed summary is:
   1) Among n=2006 PIN3 women, there are 1484 who have their location coded successfully.
      a) N=429 - were collected using a GPS receiver
      b) N=1052 - were geocoded by GDT.
      c) N=3 - were manually placed in ArcGIS on the correct tax parcel.

   2) Among n=688 3-month Postpartum women, there are 543 who have their location coded successfully.
      a) N=480 - were collected using a GPS receiver
      b) N=53 - were geocoded by GDT.
      c) N=10 - were manually placed in ArcGIS on the correct tax parcel.

   3) Among n=550 12-month Postpartum women, there are 417 who have their location coded successfully.
      a) N=366 - were collected using a GPS receiver
      b) N=30 - were geocoded by GDT.
      c) N=21 - were manually placed in ArcGIS on the correct tax parcel.

Brian's Note: I checked Molly's numbers above, and all agree with my working dataset with two small exceptions. For the 3-month Postpartum women, n=52 were geocoded and n=11 were manually placed. This discrepancy is due to a recent update to the respondent locations on July 19, 2007.

SECTION II
Brian Frizzelle

The following summary is based on the spatial data at CPC. There are three different datasets that I used to come up with these numbers:

working dataset – contains the respondent locations used in all analyses
original geocoded points – these are the PIN3 addresses geocoded by GDT
original GPS coordinates – these are the coordinates collected at respondents' homes

A) Working Dataset Summary
   1) There are n=2444 locations representing n=1491 different respondents
      a) n=553 – PinPost respondents
      b) n=938 – PIN3 respondents

   2) Of the n=553 PinPost respondents
      a) n=412 – have three locations
      b) n=129 – have two locations
         i) n=127 – have PIN3 and 3-month locations
         ii) n=2 – have 3-month and 12-month locations
         iii) n=0 – have PIN3 and 12-month locations
      c) n=12 – have only one location
         i) n=7 – have only a PIN3 location

ii) n=2 – have only a 3-month location
iii) n=3 – have only a 3-month location
d) n=9 – do not have a PIN3 location in the study area

3) Of the n=938 PIN3 respondents
a) all only have one location
b) all are hand-corrected geocoded PIN3 addresses

4) Of the n=1506 PinPost locations (this includes multiple locations per respondent)
a) n=1275 – locations are from a GPS receiver
b) n=196 – locations are hand-corrected geocoded addresses
c) n=35 – locations were placed manually on their correct tax parcel

5) Of the n=2444 locations
a) n=1484 – PIN3 address locations
b) n=543 – 3-month locations
c) n=417 – 12-month locations

B) Original Geocoded Points Summary
1) Of the n=2006 PIN3 women, there are n=1923 geocoded locations
a) Of those n=1923 locations
i) n=1493 fall within the four study area counties
ii) n=430 fall outside the four study area counties
b) Of the n=1493 locations within the study area
i) n=1484 are included in our spatial dataset
ii) n=9 could not be located, so were excluded from the spatial dataset

2) There are n=2 PIN3 locations that (a) are in our final spatial dataset, but (b) are not found in the n=1492 original geocoded locations that lie within the study area
a) one is incorrectly geocoded outside the study area
b) one was never geocoded, but we have the location because the respondent had not moved between PIN3 and the 3-month interview and we have GPS for the 3-month location

C) Original GPS Coordinates Summary
1) Of the n=665 GPS locations collected throughout the PIN Postpartum study
a) n=520 – are inside the four study area counties
b) n=145 – are outside the four study area counties

D) Explanation of Discrepancies
There are several discrepancies in the counts listed above. I will try to explain them all here.
1) In Section I.B.2, Molly lists for the 3-month Postpartum women n=53 geocoded locations and n=10 manually placed locations. In the note at the bottom of that section, Brian states that those numbers are actually n=52 and n=11, respectively. This difference is due to an update to the 3-month location for POSTID 5007. It was originally placed at the same location as the PIN3 geocoded address (no 3M GPS was collected), but the address was updated by Ginny Lee to a new location for

which we have no GPS coordinates. Brian moved the 3-month point to the correct address and placed it there manually. Thus, the change in Source status from "geocoded" to "manual".

2) There appear to be discrepancies between the numbers outlined by Molly for the number of GPS'ed locations, and the number of GPS locations that are in the working dataset. Those discrepancies are due to a difference in definition.
   a) In the Original GPS Points dataset, there is only one location per GPS waypoint. A GPS waypoint was collected during most 3-month Postpartum visits. However, a GPS waypoint was only collected during the 12-month visit **if the respondent had moved** since the 3-month visit.
   b) In Molly's data and in the working dataset, a location has its Source listed as 'GPS' if the coordinates of that location were obtained with a GPS receiver. If a respondent did not move between the 3-month and 12-month visits, and we have a 3-month GPS point, that point was duplicated for the 12-month location and assigned a Source of 'GPS'. Similarly, if a respondent did not move between PIN3 and the 3-month visit, and we have a GPS point for the 3-month visit, the geocoded PIN3 location was replaced with the 3-month GPS coordinates and the PIN3 location was given a Source of 'GPS'. In these situations, duplicate 'GPS' locations were created even though they were not in fact actually collected multiple times with a GPS receiver.

Appendix IV: Neighborhood Definitions and Development

For the PIN Postpartum Study, the term *neighborhood* refers to both the areal unit that defines the extent of an area around a location, and also the set of road segments that fall within that areal unit. Six different neighborhoods have been developed for this study. This appendix defines each of those neighborhood types and describes how they were created.

Definitions

Euclidean Neighborhoods

A Euclidean Neighborhood is simply a radial buffer surrounding a participant's location. We developed Euclidean Neighborhoods of two different sizes: ¼ mile and 1 mile. For a road to be included within a participant's Euclidean Neighborhood, some portion of that road segment must intersect the buffer polygon. No length threshold was set, so even if only 10 feet of a 1000 foot-long road segment falls within the Euclidean polygon, the entire segment is included.

Network Neighborhoods

A Network Neighborhood is a polygon that "encompasses all accessible streets"[1] within a specified distance. For example, a 15-minute service area for a location includes all the streets that can be reached within fifteen minutes from that point, whereas a 2-mile service includes all streets that are within 2 miles of the location. We developed Network Neighborhoods of two different sizes: ¼ mile and 1 mile. For a road to be included within a participant's Network Neighborhood, some portion of that road segment must intersect the buffer polygon. No length threshold was set, so even if only 10 feet of a 1000 foot-long road segment falls within the network polygon, the entire segment is included.

Secondary Zone Neighborhoods

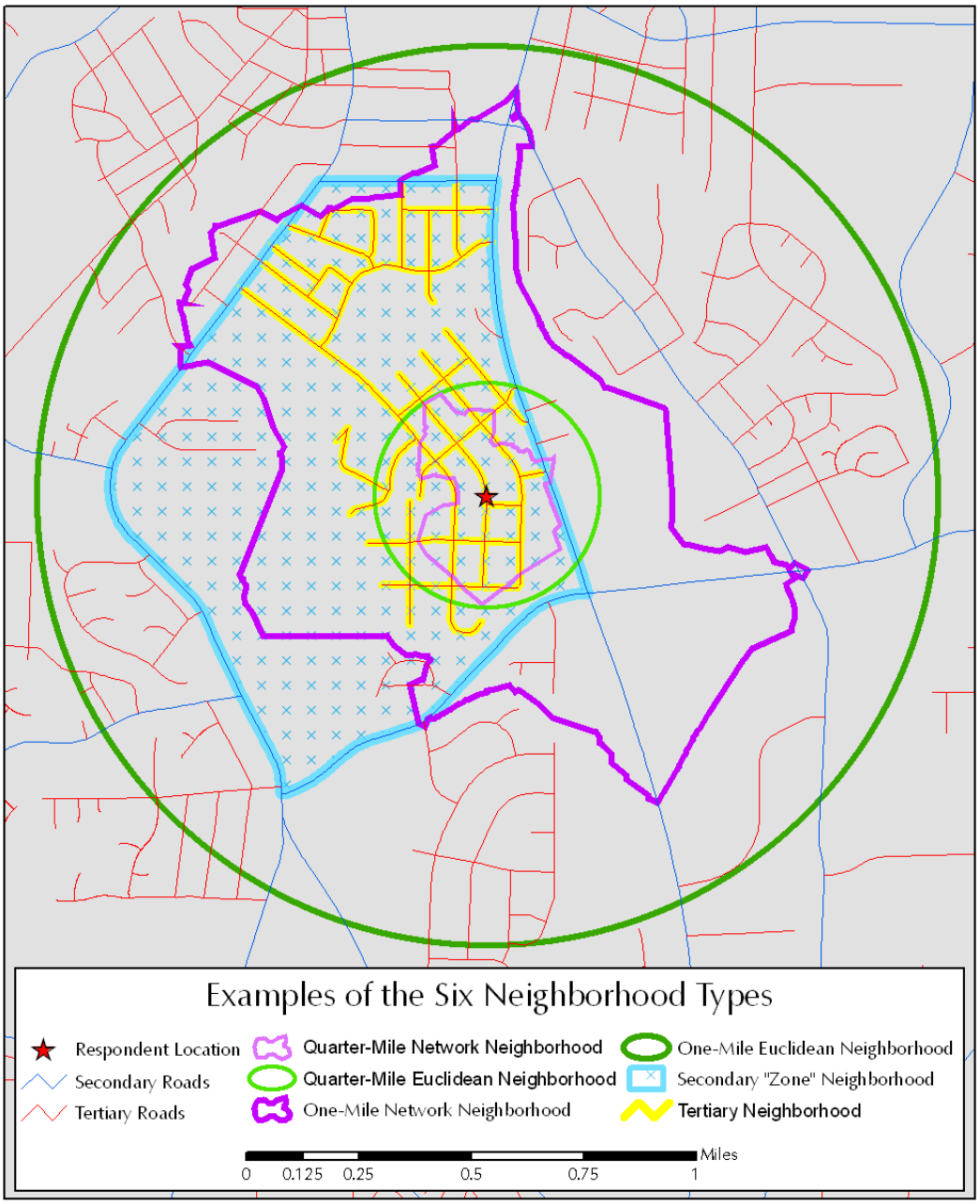
A Secondary Zone Neighborhood is a polygon that represents an area that, in most cases, contains only Tertiary roads. The Secondary Zones are bounded by Primary roads, Secondary roads, and the study area boundary (see Appendix V for a description of the road Tiers). Because of this, no road segments cross a Secondary Zone boundary. A road segment that falls inside a Secondary Zone is considered part of that neighborhood. A road segment that is coincident (i.e. lies along the border) with a Secondary Zone boundary is not considered to be part of any Secondary Zone

[1] Source: ESRI ArcGIS Desktop Help Online
http://webhelp.esri.com/arcgisdesktop/9.2/index.cfm?TopicName=Finding%20a%20service%20area

Neighborhood.

Tertiary Road Neighborhoods

A Tertiary Road Neighborhood is the only neighborhood type that is not represented by a polygon. It is a network of Tertiary roads that are interconnected and do not cross a Primary or Secondary road (see Appendix V for a description of the road Tiers).



Development

Euclidean Neighborhoods

The Euclidean Neighborhood polygons were created in ArcGIS 9.1 using the **Buffer** tool. The distances were set at 1320 feet for the quarter-mile buffers and 5280 feet for the one-mile buffers. The polygons were not dissolved, resulting in overlapping features.

Network Neighborhoods

The Network Neighborhood polygons were created in ArcMap 9.1 using the **Service Area** tool within **Network Analysis** extension. The distances were set at 1320 feet for the quarter-mile service areas and 5280 feet for the one-mile service areas.

Secondary Zone Neighborhood Polygons

The Primary and Secondary roads were extracted from the **Detailed Roads (County-Level), Study Area** feature class and were merged with the **Study Area Boundary Line** feature class. Where the Primary and Secondary roads fell just short of intersecting the boundary, they were extended outward until they touched it. Then the merged dataset was converted from polyline to polygon, and the resultant polygons were enumerated starting at 1001 in an attribute field called SecZoneID.

Secondary Zone IDs (SecZoneID) were assigned to all roads in the study area. All Tertiary roads received a SecZoneID equal to the polygon in which they are contained. Tertiary roads do not cross Secondary Zone boundaries. Primary roads received a 0 for SecZoneID, as all primary roads are part of some Zone boundary. Most Secondary roads also received a 0 for SecZoneID, as they are part of a Zone boundary. However, a handful of Secondary roads (*n*=30) fell inside of a Zone because they stopped short of intersecting another Primary or Secondary roads. It was verified that all 30 of these cases were justified as Secondary roads, even though they did not border a zone. For these 30 segments, they received the SecZoneID equal to the Zone in which they fall.

Tertiary Neighborhood Polygons

Tertiary Neighborhoods were created through a combination of Python Geoprocessor scripting and manual ArcGIS operations. First, a Python script was written that created polygons buffering each interconnected network of tertiary roads. These polygons were created in such a way so that each one was entirely contained within one and only one Secondary Zone, and each polygon also contained all tertiary roads in the same Neighborhood. Once these polygons were created, they were attributed with IDs. The Tertiary Neighborhood ID (TertNbrhdID) is a concatenation of the Secondary Zone ID, which is four digits, plus two additional digits denoting the internal number for the

Neighborhood within the Zone. For example, if there are twelve Tertiary Neighborhoods within the Secondary Zone 2345, then the Neighborhoods would be enumerated ranging from 234501 to 234512.

After the script created and attributed the Neighborhoods, they were brought into ArcMap along with the complete road dataset. The primary roads were all given a 0 for SecZoneID and TertNbrhdID. All tertiary roads were spatially joined to the Tertiary Neighborhood polygons, and the SecZoneID and TertNbrhdID attributes were copied over. Finally, the secondary roads were initially attributed with a 0 for SecZoneID and TertNbrhdID. Then the secondary roads were reselected so that only those 30 that fall within Zones were selected. The SecZoneID values for those 30 segments were assigned manually in ArcMap, as it was faster to do that than try to write up complex selection criteria within a script.

Appendix V: Road Data Documentation

Overview

The road dataset used in this project has been cleaned, modified, edited and updated more than nearly all of the other datasets combined. Therefore, it is necessary to describe all of the details in a separate section.

Each county file was first clipped to the county extent. This was done because each road file overlapped into the adjacent counties by a small amount. The feature classes were then exported to ArcInfo coverages. In ArcInfo, a new suite of attribute fields were added, populated with information from any existing fields, and the original attribute fields were deleted. The coverages were then snapped together (i.e. edge-matched) and appended. The appended four-county coverage was imported back to a feature class. In ArcMap, all roads along the county borders were checked to make sure they were complete. Any roads that were split at the county borders but maintained the same name were merged together. Any roads that changed names at the county border were left as separate road segments.
The data were cleaned and then the topological connectivity was corrected. Road class types and speeds are assigned to all segments.

A set of common and/or useful attribute fields was identified between the four original datasets (see Table V-1). Then each dataset was exported from a feature class to an ArcInfo coverage, after which its attribute table was modified so that the resultant four coverages had attribute tables with identical attribute fields. Next, the four coverages were appended together, their road segments were snapped together along the county boundaries, and then the final coverage was imported back into a Geodatabase feature class. Finally, periodic edits were made to the feature class:

1) add missing road segments (various dates)
2) delete duplicate road segments (various dates)
3) delete road segments that don't exist in reality (various dates)
4) change the AuditIDs for those segments that were combined with other segments during the audit; each ID was changed to match the ID of the segment with which it was combined (13 September 2005)
5) topological connectivity was corrected throughout the dataset
6) new roads were based on county-level parcel data; these were added as found
7) road class type and speed was added to all segments
8) renumbered duplicate AuditIDs where necessary to result in all unique AuditID values
9) any other necessary changes

Spatial Edits and Updates

Over the course of two years, the vast majority of the road segments in the dataset were checked and verified for both spatial accuracy and agreement with reality (i.e. identifying roads missing from dataset, and identifying roads in dataset that do not exist). The full extent of this work is too involved to describe all aspects in this document. Therefore, the general tasks are covered below.

Correction of Spatial Errors

In many locations, road segments did not correspondent with reality when compared with other contextual data sources, such as parcel data, air photos, and Google Maps. The roads were overlaid on the source data within GIS, or when necessary, eyeballed with respect to Google Maps. When a segment or segments were discovered to be spatially inaccurate, they were edited to correspond with the contextual data. Two possible reasons for this inaccuracy are 1) generalized features in the source road data (i.e. the line feature is more linear than in reality), and 2) out-of-date features in areas that had recently changed (see Figure V-1). This inaccuracy could also be attributed to poor quality data creation efforts and/or little to no quality control, although these are conjectural and cannot be verified.

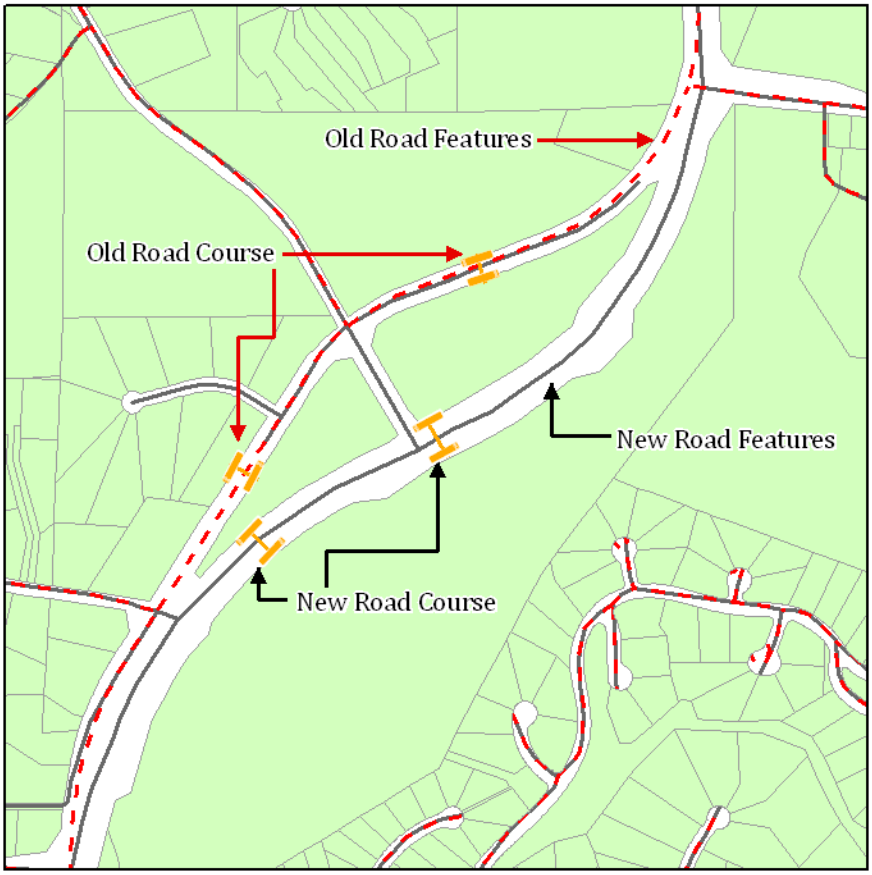


Figure V-1: Example of out-of-date features

Addition of New Road Segments

Missing road segments was by far the largest problem encountered during this process. The study area is rapidly growing in population, and the expansion of neighborhood subdivisions and other developments throughout the four counties makes it a challenge to maintain road data at any level of currency. Therefore, we were able to use parcel data from the four counties – all dated to 2005 or 2006 – and air photos and satellite images from that period or more recent to look for missing roads. Any time an area with roads was encountered in the contextual data for which we were missing segments, those segments were added in manually in ArcMap. Using parcel data, the road segments were placed as centerlines between the property parcels (see Figure V-2). If the contextual data was an air photo or satellite image, then the new segments were added directly on top of the visible road. However, if the contextual data was Google Maps, then the road segment was added using the analyst's best estimate of placement. This final option only occurred a few times.

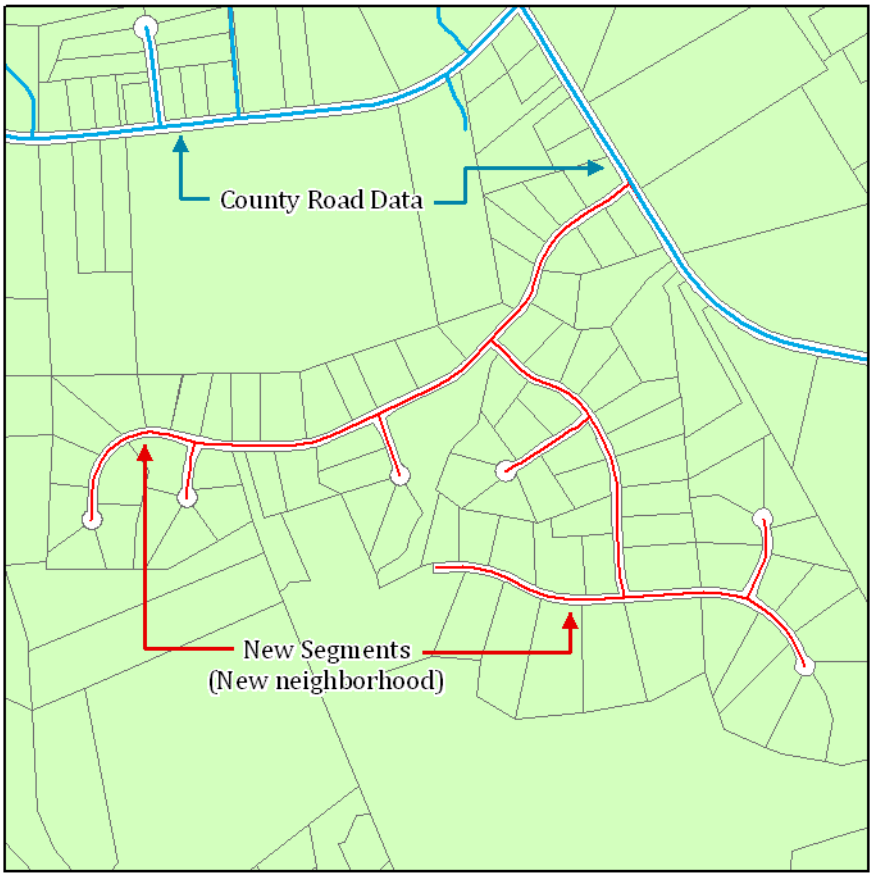


Figure V-2: New segments added using parcel data

Deletion of Non-Road Segments

This was another source of error in the road data, and existed primarily in Alamance and Chatham counties. The inclusion of non-road features in a road dataset is an annoyance, and if they are not removed, they can result in erroneous network analysis calculations. The majority of non-road features turned out to be driveways and power lines (see Figure V-3), although some river features were also included. Any time one of these features was identified, it was deleted. Then the two (or more) road segments that had intersected the deleted non-road feature were merged together. In cases where one or both of the merged segments had been rated in the audit, the AuditID or AuditIDs were noted and their corresponding audit data were dropped.

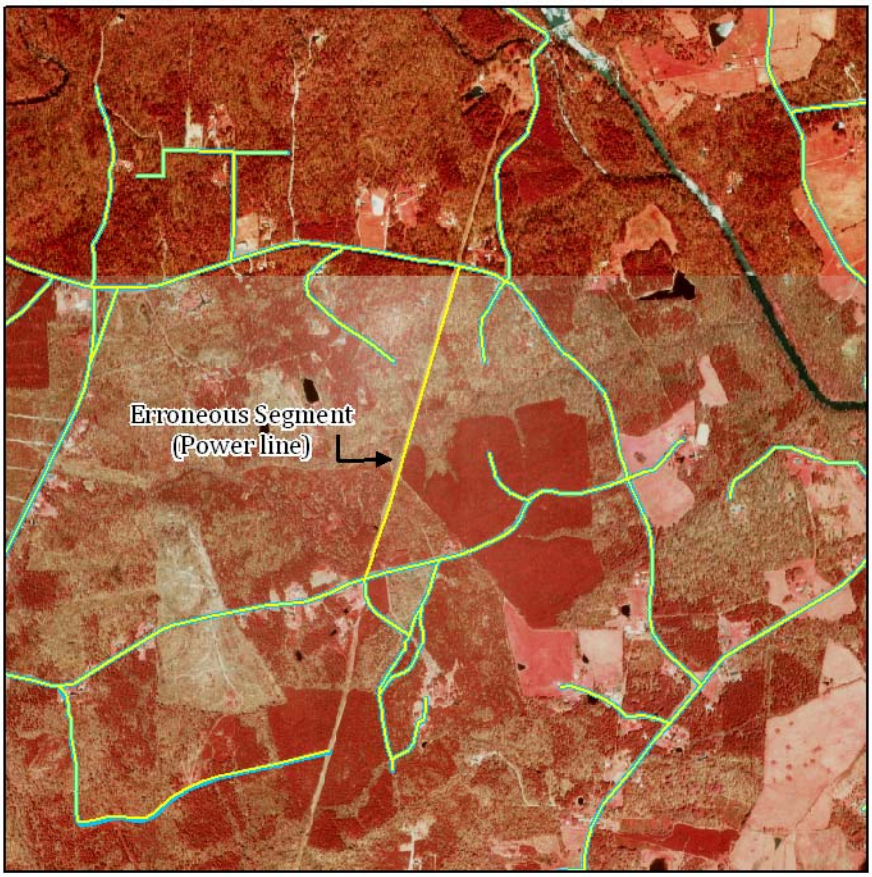


Figure V-3: Deletion of erroneous road features

Attribute Edits and Updates

Another major effort in the completion of the road data was the addition and update of the associated attribute data. A large number of attribute fields were added over time to identify and characterize the road segments.

Segment Identification

The first attempt at identifying road segments was the addition of the AuditID attribute field. This was initially intended to be a unique identifier for each segment for use in the neighborhood audits of 2005 and 2006. It was created by simply copying over the values from the OBJECTID field in the feature class and converting them to strings with leading zeroes. Therefore, a segment with OBJECTID value of 4 had an AuditID of 00004. At this stage, each segment had a unique AuditID value.

In preparation for the 2005 audit, it was suggested by Lynne Messer and Barbara Laraia that some segments should be combined during the audit and rated as one. This led to the sharing or duplication of AuditIDs across multiple segments. The two primary criteria for combining segments were 1) one of the two is a very short segment and logically belongs with the other, or 2) all segments to be combined belong to an apartment complex or trailer park.

During the course of the 2005 and 2006 audits, the AuditIDs were changed multiple times due to a variety of reasons. These include the discovery of new roads while in the field, the addition of new roads in the GIS, the merging or splitting of roads, and decisions to combine segments as we went along. Therefore, there are several old AuditID attribute fields in the dataset that are maintained for historic purposes, but are not of use to the end-user.

Due to the duplication of AuditID values, a new field called DuplicateReason was created to explain why two or more segments might share an AuditID. Every segment has a code associated with an explanation. These codes were assigned manually by the spatial analysts at CPC, and their description can be found here.

Eventually, it was decided that we still needed a unique identifier for the segments, as AuditID was no longer useful for that. A new numeric field called Link_ID was created, and was enumerated starting at 1 and increasing to the number of segments. Any time new segments were created after this point, they were given a unique Link_ID value of one higher than the maximum value at that time.

Segment Characterization

We have attempted to add attribute variables to characterize each of the segments in any way desirable by the project research team. These attributes include census block group and tract FIPS codes from the 2000 census, indicators of urbanity or rurality, road type, average speed, and a road type tier category.

The census block group FIPS codes (BG1) were assigned to each segment using a spatial join, in which the segment was assigned the FIPS code of the block group polygon in which its centroid fell. Even if a segment intersected more than one block

group, we could only assign it to one of them, and the centroid was the most objective way to do this. We then assigned the tract FIPS (TRACT1) by simply dropping the last character in the block group FIPS.

Similarly, each segment was assigned a primary county (COUNTY1) using a spatial join. The county in which the segment's centroid fell became the primary county. Then, if a segment crossed over into a second county, that became the secondary county and was assigned to COUNTY2.

Two urban/rural variables were assigned to each segment. Initially, urbanity was based at the census block level (the attribute is called Urban), and was assigned based on the block in which the segment centroid fell. You can read about how each block was attributed as urban or rural here. However, it was later requested that urbanity also be defined at the block group level, so the above approach was replicated using block group polygons, with the results being assigned to the attribute field UrbRur_Blockgroup.

Road segments were assigned types in the field Class. There are eight categories, ranging from Interstates to Neighborhood Roads. Selection of groups of roads for attribution was done using a combination of search queries (e.g. identifying interstates with 'I-40' or –I-85', identifying State Highways with 'NC' as the first two characters of the street name), manual searches of the attribute table, and visual inspection of the roads in comparison to external contextual data sources. The attribution of all roads was thoroughly QC'ed by Brian Frizzelle and considered complete and accurate.

Roads were also assigned an average speed, called Speed_MPH. Speeds were tied to the road Class, it's urbanity (Urban), and it's presence inside a municipal boundary (using the **Municipalities, PinPost** feature class). The rules for the assignment of speeds can be found here.

Finally, the last characterization added to the road data was the Tier variable. Tier was the first step in identifying tertiary neighborhoods (see Appendix IV). There are three Tier categories: Primary, Secondary and Tertiary. In general, interstates are Primary Roads, low-speed two-lane non-thoroughfare neighborhood roads are Tertiary, and all others in-between are Secondary. The idea behind this is that people that live within a network of interconnected Tertiary roads that do not cross a Primary or Secondary road are more alike than people that live in other interconnected Tertiary networks, regardless of distance. Specific rules for the assignment of Tier categories can be found here.

Table V-1: Comparison of Attribute Fields Among Source and Final Road Datasets (like colors indicate comparable fields)

Final	Alamance	Chatham	Durham	Orange
OBJECTID	OBJECTID	FNAME	ROADS_	STREETS_
PREDIR	OBJECTID_1	ROUTE1	ROADS_ID	STREETS_ID
PREFIX	NAME_ID	RTTYPTXT1	ITRE_ID	DIR_PREFIX
NAME	SEGMNT_ID	RTNUM1	ROAD_PRE	NAME
TYPE	PREDIR	RTTYP1	ROAD_NAME	TYPE
SUFFIX	PREFIX	RTSPE1	ROAD_TYPE	DIR_SUFFIX
STNAME	NAME	RTDIR1	ROAD_SUF	STNAME
LT_FROM	TYPE	ROUTE2	STNAME	SR
LT_TO	SUFFIX	RTTYPTXT2	STRNAME	L_F_ADD
RT_FROM	POSTDIR	RTNUM2	ALIAS	L_T_ADD
RT_TO	LEFT_FROM	RTTYP2	ALIAS2	R_F_ADD
ADD_MIN	LEFT_TO	RTSPE2	FTR_CODE	R_T_ADD
ADD_MAX	RIGHT_FROM	RTDIR2	RECNUM	MAINTENANC
ALT1_NAME	RIGHT_TO	ROUTE3	ADD_LO_ODD	SURFACE
ALT2_NAME	LEFT_FROM_	RTTYPTXT3	ADD_HI_ODD	SPEED
COUNTY1	LEFT_TO_FU	RTNUM3	ADD_LO_EVE	CLASS
COUNTY2	RIGHT_FR_1	RTTYP3	ADD_HI_EVE	CURB
TRACT1	RIGHT_TO_F	RTSPE3	BLK_LO_ODD	WIDTH
TRACT2	LEFT_FROM1	RTDIR3	BLK_HI_ODD	MILE
BG1	LEFT_TO_RE	FEDIRP	BLK_LO_EVE	CROSS1
BG2	RIGHT_FR_2	FENAME	BLK_HI_EVE	CROSS12
BG3	RIGHT_TO_R	FETYPE	COMMENTS	CROSS2
COMMENTS	ALT1_PREDI	FEDIRS	PWTYPE	CROSS22
	ALT1_PREFI	CFCC	FEATURE_ID	CITY
	ALT1_NAME	ZIPL	FACILITY_I	SEGID
	ALT1_TYPE	ZIPR	DEVELOPMEN	MOADSTID
	ALT1_SUFFI		SURFACE	COABBR
	ALT1_POSTD		RESURF_YEA	MAJORRDS
	ALT2_PREDI		CONTRACT_	
	ALT2_PREFI		FUND_SOURC	
	ALT2_NAME			
	ALT2_TYPE			
	ALT2_SUFFI			
	ALT2_POSTD			
	SPEED			
	DIRECTIONA			
	COUNTY_BOU			
	MAINT_DATE			
	STREET_TYP			
	TOWNSHIP			
	PHOTOGRAPHS			
	ST_TYPE			
	COMMENTS			

Appendix VI: Land Use Data Documentation

Land use data was acquired at the tax parcel level for Durham County and the towns of Chapel Hill and Carrboro. Each entity categorized their land use differently, and after looking through the data and comparing land use categories, it was decided to not use the Carrboro data in our work.

For Chapel Hill and Durham, we created eight new land use categories and placed all of the original categories within our new ones.

The eight land use categories, or PinPost Land Use Types, used in this project are:

1. Low- and Medium-Density Residential
2. High-Density Residential
3. Agricultural/Industrial
4. Commercial
5. Office
6. Institutional
7. Parks/Open Space
8. Other

Below are lists, organized by PinPost Land Use Type, of the original Chapel Hill and Durham land use categories that were aggregated into the project categories.

<u>Low- and Medium-Density Residential</u>

Chapel Hill

- low residential
- medium residential

Durham

- *RESIDENTIAL*
- AG/ MOBILE HOME
- AG/ MULTIPLE DWG'S
- RES/ 1-FAMILY
- RES/ 2-FAMILY
- RES/ 3-FAMILY
- RES/ 4-FAMILY
- RES/ DWG + 1-MBL HM
- RES/ DWG + 2-MBL HMS
- RES/ ESTATE
- RES/ HISTORICAL
- RES/ HOMEOWNERS ASSOC IMP
- RES/ LSHLD IMPROV
- RES/ MOBILE HOME
- RES/ MULTIPLE DWG'S
- RES/ PATIO HOME W/ LAND
- RES/ RURAL RES W/ ACREAGE
- RES/ SEASONAL 1-FAMILY
- RES/ TOWNHOUSE W/ LAND
- RES/ W/ LEASEHOLD
- RES/ YEAR-ROUND

High-Density Residential

Chapel Hill

- high residential

Durham

- RES/ 1-MH OR MH SITE
- RES/ 2-MH OR MH SITES
- RES/ CONDO-PUD W/ LAND

Agricultural/Industrial

Chapel Hill

- agrarian
- industrial

Durham

- *AGRICULTURAL*
- *INDUSTRIAL*
- *PUBLIC SERVICE*
- AG/ 1-FAMILY
- AG/ 1-MH OR MH SITE
- AG/ FIELD CROPS
- AG/ LIVESTOCK & PRODUCTS
- AG/ OTHER LIVESTOCK
- AG/ TOBACCO
- AG/ YEAR-ROUND
- IND/ BIOTECH - BIOPHARM
- IND/ ENVIRONMENTAL SCI
- IND/ INFO TECH - TELCOMM
- IND/ MANUF-PROCESSING
- IND/ MATERIALS SCIENCE
- IND/ MICROELECTRONICS
- IND/ MINING & QUARRY
- IND/ MISC RESEARCH
- IND/ PHARMACEUTICAL-HLTH
- IND/ W/ LEASEHOLD
- PUBL SVC/ AIR
- PUBL SVC/ COMMUNICATION
- PUBL SVC/ ELEC PWR-HYDR
- PUBL SVC/ ELEC TRANSM
- PUBL SVC/ ELECTRIC & GAS
- PUBL SVC/ GAS TRANSM
- PUBL SVC/ MOTOR VEHICLE
- PUBL SVC/ RADIO
- PUBL SVC/ RAILROADS
- PUBL SVC/ SEWER & WATER
- PUBL SVC/ SOLID WASTE
- PUBL SVC/ TELEPHONE
- PUBL SVC/ TELEVISION
- PUBL SVC/ TV NOT COMM
- PUBL SVC/ WATER
- PUBL SVC/ WATER SUPPLY

Commercial

Chapel Hill

- mixed use
- town/village center

Durham

- COMM SVC/ CHILD DAY-CARE
- COMM SVC/ CULTURAL & REC
- COMM SVC/ MISC
- COMM SVC/ PROF ASSOC
- COMM SVC/ RDS-STR-PKWY
- *COMMERCIAL*
- COMM/ MISC SERVICES
- COMM/ MISC SVC LEASEHOLD
- COMM/ MOBILE HOME PARK
- COMM/ MOTEL
- COMM/ MOTOR VEH LEASEHOLD
- COMM/ MINI-WAREHOUSES

- *REC/ENTERTAIN/ASUSEMNT*
- COMM SVC/ W/ LEASEHOLD
- COMM SVC/ABC STORES
- COMM/ 1-STY SGL OCCUPANT
- COMM/ 1-STY SMALL MULTI
- COMM/ APARTMENT-DWG CONV
- COMM/ APARTMENT-GARDEN
- COMM/ APARTMENT-HIGH RISE
- COMM/ AREA SHOP CTRS
- COMM/ AUTO BODY-TIRE
- COMM/ AUTO CAR WASH
- COMM/ AUTO DLR-SLS & SVC
- COMM/ BANK & OFFICE LSHLD
- COMM/ BANK W/ OFFICE
- COMM/ BANKS & OFFICES
- COMM/ BAR
- COMM/ BOT & NATURAL GAS
- COMM/ COLD STG FACILITIES
- COMM/ CONV STORE W/ GAS
- COMM/ CONV STORE W/O GAS
- COMM/ CONVERTED RESIDENCE
- COMM/ DEALERSHIP-S&S
- COMM/ DINERS & LUNCH
- COMM/ DINING ESTABLISHMNT
- COMM/ DINING LEASEHOLD
- COMM/ DISTRIB LEASEHOLD
- COMM/ DRIVE-IN BANK
- COMM/ DWNTWN ROW TYPE
- COMM/ DWNTWN ROW-DETACHED
- COMM/ FAST FOOD
- COMM/ FUNERAL HOME
- COMM/ GAS-FUEL-OIL ST
- COMM/ GREENHOUSES
- COMM/ HISTORICAL
- COMM/ HOTEL
- COMM/ INNS-B&B-RM HOUSE
- COMM/ LIVING ACCOMM
- COMM/ LRG RETAIL FOOD ST
- COMM/ MANUAL CAR WASH
- COMM/ MOTOR VEHICLE SVCS
- COMM/ MULTI-PURPOSE
- COMM/ NIGHT CLUBS
- COMM/ PARKING GARAGE
- COMM/ PARKING LOTS
- COMM/ REGIONAL SHOP CTRS
- COMM/ RESTAURANTS
- COMM/ RET SVS LEASEHOLD
- COMM/ RETAIL SERVICES
- COMM/ SELF-SER CAR WASH
- COMM/ SNACK BARS
- COMM/ STANDARD BANK
- COMM/ SVC & GAS STATION
- COMM/ TRUCKING TERMINALS
- COMM/ VET CLINIC
- COMM/ W/ LEASEHOLD
- COMM/ WHSE-STORAGE
- REC/ AMUSEMENT FACILITIES
- REC/ ATHLETIC FIELDS
- REC/ AUD & EXH HALLS
- REC/ BOWLING
- REC/ COUNTRY CLUB
- REC/ DRIVE-IN THEATER
- REC/ GOLF COURSE
- REC/ HEALTH SPA
- REC/ INDOOR SKATING
- REC/ INDOOR SPT FACILITY
- REC/ MOTION PIC THEATER
- REC/ OTHER MISC
- REC/ OTHER OUTDOOR SPORT
- REC/ OUTDOOR SPORT ACT
- REC/ OUTDOOR SWIMMING
- REC/ PARKS
- REC/ REC & ENT LEASEHOLD
- REC/ SOCIAL ORGANIZATIONS
- REC/ STAD-ARENA-FLD HSE
- REC/ TV & RADIO STUDIO
- REC/ YMCA OR YWCA

Office

Chapel Hill

- office

Durham

- COMM/ OFFICE BLDG
- COMM/ PROFESSIONAL BLDG

Institutional

Chapel Hill

- institutional

Durham

- COMM SVC/ ANIMAL WELFARE
- COMM SVC/ CEMETERIES
- COMM SVC/ CHURCH
- COMM SVC/ CHURCH PARS-RET
- COMM SVC/ CHURCH PK LOT
- COMM SVC/ CHURCH SCHOOL
- COMM SVC/ COLLEGE
- COMM SVC/ CORRECTIONAL
- COMM SVC/ EDUCATION
- COMM SVC/ GOV BLDGS
- COMM SVC/ HEALTH
- COMM SVC/ HOME FOR AGED
- COMM SVC/ HOSPITAL
- COMM SVC/ LIBRARY
- COMM SVC/ MILITARY BASE
- COMM SVC/ MISC LEASEHOLD
- COMM SVC/ OTHR EDUC FACIL
- COMM SVC/ OTHR HEALTH FAC
- COMM SVC/ PARKING LOT
- COMM SVC/ POLICE-FIRE
- COMM SVC/ REC FACILITIES
- COMM SVC/ RELIGIOUS
- COMM SVC/ SCHOOL
- COMM SVC/ SPECIAL SCHOOLS
- COMM SVC/ WELFARE
- COMM SVC/ WELFARE LSHLD
- COMM SVS/ ASSISTED LVG

Parks/Open Space

Chapel Hill

- parks/open space

Durham

- *WILD-FORR-CONS-LNDS*
- WILD/ CITY PARKS & REC
- WILD/ COUNTY PARKS & REC
- WILD/ STATE PARKS & REC

Other

Chapel Hill

- row
- row railroad
- undeveloped land

Durham

- *COMMUNITY SERVICES*
- *VACANT LAND*
- C0MM/ LRG RETAIL OUTLET
- PRESENT-USE/AGRICULTURAL
- PRESENT-USE/FORESTRY
- PRESENT-USE/HORTICULTURAL
- VAC AG/ 10 ACRES OR >
- VAC AG/ ABANDONED
- VAC PRV UTL/ WELL SITE
- VAC PU/ W/ LEASEHOLD
- VAC RES/ < 10 ACRES
- VAC RES/ DEVELOPER
- VAC RES/ HOMEOWNERS ASSOC
- VAC RES/ LOTS-SML TRACTS
- VAC RES/ RURAL < 10 ACRES
- VAC RES/ UNDERWATER LANDS

- VAC AG/ OTHER RURAL
- VAC AG/ PART OF FARM
- VAC AG/ TMBR 20 ACRES & >
- VAC AG/ W/ NON-LVG IMPVS
- VAC COMM/ CONDO ASSOC
- VAC COMM/ DEVELOPER
- VAC COMM/ W/ LEASEHOLD
- VAC EXM/ W/ LEASEHOLD
- VAC IND/ W/ LEASEHOLD
- VAC PRV UTL/ SEWAGE SITE
- VAC RES/ W/ LEASEHOLD
- VAC RES/ W/ SML IMPROV
- VAC/ URBAN RENEWAL
- VAC/CONSERVATION EASEMNT
- VACANT COMMERCIAL
- VACANT EXEMPT
- VACANT INDUSTRIAL
- VACANT PRIVATE UTILITY
- VACANT PUBLIC UTILITY
- <blank>

Appendix VII: Parks Data Documentation

Author: Lindy Nelson (modified by Brian Frizzelle to reflect new layer names)

Methods for Compiling Park Information

List Development – A comprehensive list of municipal, neighborhood, county, state and federal parks in the study area (Alamance, Chatham, Durham and Orange Counties) was compiled from a number of sources. I describe these sources below, along with methodology for extracting park names and general or specific locations:

Sources:

- Carrboro Recreation and Parks Department – Park Facilities (document), downloaded from http://www.ci.carrboro.nc.us/rp/PDFs/Carbparks2003.pdf in June, 2005
    - I generated a list from this document and compared with GIS shapefiles obtained from Carrboro GIS department
- Carrboro Recreation and Parks Department website, http://www.ci.carrboro.nc.us/rp/parks.htm
    - I validated park data from the Park Facilities document (above) by comparing information on this website
- Orange County recreation map, obtained from Southern Human Services Center in Chapel Hill, NC
    - This map offered a comprehensive list of parks in Orange County, general locations and recreation facilities available at each park. I relied heavily upon this source for filling out recreation facilities information in Orange County.
- Chapel Hill Parks recreation guide
    - This guide offered a list of parks in Chapel Hill, locations and addresses, and delineated recreation facilities available at each park. I used it to locate and validate other Orange County parks information
- Leisure Living Guide – The City of Burlington Recreation & Parks Department (aka, "Recreation Chart"), downloaded from http://burlingtonnc.gov/documents%5CRecreation%20&%20Parks/Recreation%20Chart.pdf in April, 2005.
    - This guide offered a list of parks in the Burlington area, addresses and delineated recreation facilities at each park. I used it to fill out recreation facilities information on parks in Alamance County.
- Trails/Facilities/Activities in Chatham County, June 2001
    - This document was obtained from Kelly Evenson and outlines available parks and trails in Chatham County. I searched for and located many of

the parks in this document online through www.google.com and maps.google.com.

- Walking Trails in Chatham County, North Carolina
  - This document is available online and supplies information on walking trails located in parks in Chatham County (downloaded in February, 2005 from http://www.co.chatham.nc.us/RecreationDepartment/ChathamCountyTrails.htm). The document helped generate the list of Chatham County parks.
- Durham GIS website (http://gisweb2.ci.durham.nc.us/sdx/imap_launch.html).
  - The parks locator on the Durham GIS website was used to verify and compare information on recreation facilities in Durham City and County parks against the Durham Parks shapefile sent from the City of Durham GIS Department. Annie completed the data table for Durham parks recreation facilities information based on the information generated from this website
- Siler City website, http://www.silercity.org/siler/html/SilerMain.html:
  - This website was used to generate the list of parks in Siler City, as well as addresses of the parks. The addresses were used on maps.google.com to locate appropriate parcels on the Chatham County parcel shapefile.
- City of Mebane website, http://www.cityofmebane.com/newsite/mod.php?mod=userpage&menu=100403&page_id=11
  - This website was used to compose a list of parks in the City of Mebane and some general location information to follow up on by searching ownership information on the Alamance County park layer, DOQs and maps.google.com.
- City of Elon Recreation website, http://www.elonnc.com/elon%20recreation.htm
  - This website was used to assemble a list of parks in the City of Elon.
- City of Burlington Parks and Recreation Dept. website, http://www.ci.burlington.nc.us/index.asp?NID=55
  - This website supplied information on the recreation facilities in Alamance County parks. I used the website to complete the data table entries for parks in Burlington and some of the surrounding areas.
- Attractions – Parks & Recreation, Burlington Alamance County Area website, http://www.burlington-area-nc.org/categories.asp?id=85
  - This website was helpful for supplying information for parks in Alamance County that were outside municipal boundaries. I used the website to help generate the parks list and complete that recreation facilities data table for some Alamance County parks.
- maps.google.com
  - This website was used extensively to locate parks that had known addresses, search satellite imagery for park features and locations and to browse for new or unknown parks on Google's database.

- www.google.com
    - I performed Google searches on parks that had little or no information on addresses or locations, or had no information on recreation facilities.
- Digital Orthoquad Photographs (DOQs): I downloaded DOQs from the campus library server (afs) and used them to validate park information by overlaying selected parcel shapefiles on DOQs and using aerial photo interpretation to determine whether the parcel selection was accurate (i.e., existence of ballparks, open space, tennis courts, etc.)
- GIS Dataset: Roads and Municipal Boundaries were used to locate parks by street name, address and general location according to directions listed in other online and documented sources.

Shapefile Compilation – The Parks feature class (formerly PINParksFinal.shp shapefile) is a compilation of records I appended and edited to form a single GIS layer that represents, within the accuracy of parent materials, the legal boundaries of all parks in the study area (Alamance, Chatham, Durham and Orange Counties).

- Parcel Selection: I used complete parcel layers, including ownership information from tax data, to verify that specific park parcels were owned by respective government or private organizations. When a park located was confirmed by ownership and by maps.google.com satellite or road imagery, by address or by DOQ, I selected parcels from the county parcel layer and exported them into new shapefiles and added park names in a new field.

- Selection from existing shapefiles: I used existing park and open space layers to extract parks for the study area, clipping layers according to the study area boundaries and selecting parks that fit the definitions of a park according to the study's criteria [see Table 1. Classification of Parks (Mertes & Hall, 1996)].

- List shapefiles: a list of shapefiles used to obtain park information and their respective sources can be found in the Excel file ParkLayers.xls, located in \PIN\Postpartum\Data\Parks misc.

Data Table Complilation – PINParksDataTable.xls includes recreation facilities information for the study area parks. This information was compiled from much of the same sources as were used to name and locate parks in the study area. These sources are described below, along with methodology for extracting recreation facilities information per park:

Sources:

- Carrboro Recreation and Parks Department – Park Facilities (document), downloaded from http://www.ci.carrboro.nc.us/rp/PDFs/Carbparks2003.pdf in June, 2005

    - I generated a list from this document and compared with GIS shapefiles obtained from Carrboro GIS department
- Carrboro Recreation and Parks Department website, http://www.ci.carrboro.nc.us/rp/parks.htm
    - I validated park data from the Park Facilities document (above) by comparing information on this website
- Orange County recreation map, obtained from Southern Human Services Center in Chapel Hill, NC
    - This map offered a comprehensive list of parks in Orange County, general locations and recreation facilities available at each park. I relied heavily upon this source for filling out recreation facilities information in Orange County.
- Chapel Hill Parks recreation guide
    - This guide offered a list of parks in Chapel Hill, locations and addresses, and delineated recreation facilities available at each park. I used it to locate and validate other Orange County parks information
- Leisure Living Guide – The City of Burlington Recreation & Parks Department (aka, "Recreation Chart"), downloaded from http://burlingtonnc.gov/documents%5CRecreation%20&%20Parks/Recreation%20Chart.pdf in April, 2005.
    - This guide offered a list of parks in the Burlington area, addresses and delineated recreation facilities at each park. I used it to fill out recreation facilities information on parks in Alamance County.
- Trails/Facilities/Activities in Chatham County, June 2001
    - This document was obtained from Kelly Evenson and outlines available parks and trails in Chatham County. I searched for and located many of the parks in this document online through www.google.com and maps.google.com.
- Walking Trails in Chatham County, North Carolina
    - This document is available online and supplies information on walking trails located in parks in Chatham County (downloaded in February, 2005 from http://www.co.chatham.nc.us/RecreationDepartment/ChathamCountyTrails.htm). The document helped generate the list of Chatham County parks.
- Durham GIS website (http://gisweb2.ci.durham.nc.us/sdx/imap_launch.html).
    - The parks locator on the Durham GIS website was used to verify and compare information on recreation facilities in Durham City and County parks against the Durham Parks shapefile sent from the City of Durham GIS Department. Annie completed the data table for Durham parks recreation facilities information based on the information generated from this website
- Siler City website, http://www.silercity.org/siler/html/SilerMain.html:

    - This website was used to generate the list of parks in Siler City, as well as addresses of the parks. The addresses were used on maps.google.com to locate appropriate parcels on the Chatham County parcel shapefile.
- City of Mebane website, http://www.cityofmebane.com/newsite/mod.php?mod=userpage&menu=100403&page_id=11
    - This website was used to compose a list of parks in the City of Mebane and some general location information to follow up on by searching ownership information on the Alamance County park layer, DOQs and maps.google.com.
- City of Elon Recreation website, http://www.elonnc.com/elon%20recreation.htm
    - This website was used to assemble a list of parks in the City of Elon.
- City of Burlington Parks and Recreation Dept. website, http://www.ci.burlington.nc.us/index.asp?NID=55
    - This website supplied information on the recreation facilities in Alamance County parks. I used the website to complete the data table entries for parks in Burlington and some of the surrounding areas.
- Attractions – Parks & Recreation, Burlington Alamance County Area website, http://www.burlington-area-nc.org/categories.asp?id=85
    - This website was helpful for supplying information for parks in Alamance County that were outside municipal boundaries. I used the website to help generate the parks list and complete that recreation facilities data table for some Alamance County parks.
- maps.google.com
    - This website was used extensively to locate parks that had known addresses, search satellite imagery for park features and locations and to browse for new or unkown parks on Google's database.
- www.google.com
    - I performed Google searches on parks that had little or no information on addresses or locations, or had no information on recreation facilities.
- Digital Orthoquad Photographs (DOQs): I downloaded DOQs from the campus library server (afs) and used them to validate park information by overlaying selected parcel shapefiles on DOQs and using aerial photo interpretation to determine whether the parcel selection was accurate (i.e., existence of ballparks, open space, tennis courts, etc.)
- GIS Dataset: Roads and Municipal Boundaries were used to locate parks by street name, address and general location according to directions listed in other online and documented sources.

The following table contains a classification system for parks.

Table VII-1. Classification of Parks (Mertes & Hall, 1996)

Parks and Open Spaces Classifications

Classification	*General Description*	*Location*	*Size*
Mini-Park	Used to address limited, isolated or unique recreational needs	Service area is usually less than ¼ mile radius	2500 sq ft to 1 acre
Neighborhood Park	Basic unit of the park system; serves as the recreational and social focus of the neighborhood; focus is on informal active and passive recreation	Centrally located within its service area, usually ¼ to ½ mile radius, uninterrupted by non-residential roads and other physical barriers	5 to 10 acres
School Park	Combines park with school site; similar to other classes of parks	Determined by location of school district property	Variable, depends on function
Community Park	Serves broader purpose than neighborhood park; focus is on meeting community-based recreation needs, as well as preserving unique landscapes and other spaces	Determined by the quality and suitability of the site; usually serves 2 or more neighborhoods, service area between ½ to 3 mile radius	As needed to accommodate desired uses; usually between 30 and 50 acres
Large Urban Park	Serves broader purpose than community parks; used when community and neighborhood parks are not adequate to serve the needs of the community; focus is on meeting community-based recreational needs, as well as preserving unique landscapes and open spaces	Determined by the quality and suitability of the site; usually serves the entire community	As needed to accommodate desired uses; usually a minimum of 50 to 75 acres
Sports Complex	Consolidates heavily programmed athletic fields and associated facilities to larger and fewer sites strategically located throughout the community	Strategically-located community-wide facilities	Determined by project demand; usually a minimum of 25 acres, with 40 to 80 acres being optimal
Natural Resources Areas	Lands set aside for preservation of significant natural resources, remnant landscapes, open space, and visual aesthetics /buffering	Resource availability and opportunity	Variable
Greenways	Effectively tie park system components together to form a continuous park environment	Resource availability and opportunity	Variable
Special Use	Covers a broad range of parks and recreation facilities oriented toward single-purpose use	Variable, dependent on specific use	Variable
Private Park / Recreation Facility	Parks and recreation facilities that are privately owned yet contribute	Variable, dependent on specific use	Variable

Pathway Classifications

Classification	*General Description*
Park Trail	Multipurpose trails located within greenways, parks, and natural resource areas; focus is on recreational value and harmony with natural environment
Connector Trail	Multipurpose trails that emphasize safe travel for pedestrians to and from parks and around the community; focus is as much on transportation as it is on recreation
On-Street Bikeways	Pave segments of roadways that serve as a means to safely separate bicyclists from vehicular traffic
All-Terrain Bike Trail	Off-road trail for all-terrain (mountain) bikes
Cross-Country Ski Trail	Trails developed specifically for traditional and skate-style cross-country skiing
Equestrian Trail	Trails developed for horseback riding

Appendix VIII: Recreational Facility Data Documentation

Author: Lindy Nelson (modified by Kelly Evenson and Brian Frizzelle)
Original Document: *PINPA_FacilitiesCallingProtocol.doc*

PIN PAPost Physical Activity Facilities Calling Protocol: Last Updated 8/16/07

The Reference USA database was obtained by Lindy Nelson in July 2005 (see documentation under Reference USAdocumentation.doc). All facilities that resulted from the search were included in the database. Each facility name and information was then evaluated to see if more information was needed. Kelly Evenson and Ginny Lee categorized the places based on the name and determined whether a facility should be verified or not (variable is called "To check" as yes or no).

If more information was needed, a web search was first conducted to see if the information was available online. This was done by searching the name of the facility at www.google.com. If this provided the needed information, or some of the information, then the website and any notes were listed in the column "Web check". In some cases, the web information will answer all questions and the facility was not called.

If a search of the internet did not provide the necessary information, then the facility was called. This was conducted by Ginny Lee and Leigh Jolley (Alamance County only). Upon calling, if the number was disconnected then directory assistance was used to verify that the facility no longer existed. If a new number was obtained from directory assistance, the location of the facility was verified. Through searching, if a new facility was found, it was added to the excel sheet.

Reasons calls were made to the different types of facilities is described below. In general we wanted to determine:

1. If the location is a place a PIN woman can go for physical activity. We are not interested in places for men or children only.
2. If the facility provides some sort of physical activity, and if so, what kind.
3. What types & how many facilities the location offers.

** We checked to make sure that none of the facilities were being double counted (i.e., if a gymnasium contains 2 basketball hoops, then only count it under basketball hoops and not under gymnasium).

Locations with the following facilities/activities were called to inquire about specific details.

Aerobics Classes (AERO): To verify that the facility was either a standalone aerobics facility or a class offered at a PA facility. Aerobics class types included all types of dance.

Basketball (BB): To assess if the facility was an association or club (excluded). It was also determined if the facility was used primarily for a youth group (excluded) or if adults could use the facility (included). If the facility was for adult use, the number of hoops was quantified.

Bowling (BOWL): This activity was included unless the facility was solely comprised of bowling leagues and clubs (excluded).

Golf, Private (GOLFPRI), Public (GOLFPUB), Semiprivate (GOLFSEM), Driving Range (GOLFRANG), or Mini-Golf (GOLFMINI): To find out the number of holes on the golf course and if the club was public, private, or semi-private. The facility was considered public if no initial membership/initiation fee was required to play. The facility was considered private if an initial membership/initiation fee (of any amount) was required to play. The facility was considered semi-private if patrons were given the choice between becoming a member and pay a membership fee or to pay on a game by game basis. These three types were all included. Golf driving ranges were also recorded and included.

Gyms: To ascertain the presence of weight lifting equipment and aerobic equipment (included combination of weights and aerobic machines called 'Core Gym' - **CORE**). If the gym offered circuit training on resistance/hydraulic machines, it was categorized as (**CIRC)**. If the health club had classes, it was asked if they had classes in aerobics, pilates, tai chi, martial arts, yoga, and/or dance (all included under aerobics classes - **AERO**) Additionally, the number of tennis courts (**TENN**), racquetball courts (**RACQ**), basketball hoops (**BB**), volleyball courts (**VOLL**), indoor tracks (**TRKIN**), indoor or outdoor pools (**INPOOL/OUTPOOL**) were obtained (all included).

Horseback riding (EQUES): To verify that horseback riding lessons were offered to women (included).

Martial Arts Classes (MART): To verify that classes offered included women. Martial Arts Classes included: Tai Chi, Tae Kwon Do, Karate, Judo etc.

Pilates Classes (PILA): To verify that the facility was a standalone pilates facility (included), or an aerobics class instructor at a health club (excluded)

Racquetball/Handball (RACQ): To obtain the number of racquetball or handball courts (all included).

Rockclimbing (WALL): To verify that the facilities were utilized by adults (included). These include both indoor and outdoor climbing walls.

Roller (ROLL)/Ice Skating (ICE)/Blading, /Indoor/Outdoor: To obtain the number of skating rinks and whether they were indoor or outdoor, for ice or rollerblading (all included).

Soccer (FIELD): To assess if the facility was an association or club (excluded). It was also determined if the facility was used primarily for a youth group (excluded) or if women could use the facility (included). If the facility was for adult use, the number of fields was quantified. These were counted as all-purpose fields to decrease the chances of overlap (most places referred to a soccer field as a general purpose field as well).

Swimming (INPOOL/OUTPOOL): To obtain whether you had to live in the neighborhood/community to be a member of the swimming club (excluded) or if membership was open to the general public (included). The number of pools and whether they were indoor or outdoor pools (included) or if they were wading pools, whirlpools or baby pools (excluded). Designated swimming areas in lakes or other bodies of water were categorized under OUTPOOL.

Tennis (TENN): To obtain the number of tennis courts and whether they were indoor or outdoor tennis courts (all included).

Track (TRKIN/TRKOUT): To obtain the number of indoor and outdoor tracks (all included).

Tumbling Classes (TUMB): To see if classes were offered to adults (included)

Volleyball (VOLL): To obtain whether the courts are indoor or outdoor. Courts were only counted if they were permanent and not part of a gym with multi-purpose use. We included all types of courts (hard court/sand).

Batting Cages: This was not included since it was presumed that women would not utilize batting cages for physical activity.

Croquet: Croquet was not included as its prevalence was low and its contribution to physical activity is minimal.

Football: This was excluded since it was presumed that women would not utilize football fields for physical activity.

Gymnasium: This type of facility was not included since all gyms were accounted for by another physical activity elsewhere. (i.e. As a volleyball court or for basketball, etc.).

Motorsports: This was excluded since women usually do not take part in motorsports.

Recreation Centers: They were not called. Information regarding recreation centers was consolidated with the park file.

Skateboarding: This was excluded since women usually do not skateboard.

Calling script for verifying business

1) Call the listed phone number. Call up to 3 times, at different times of the day, different days of the week. Make sure one of the times is a weekend. Please record the date and time of the call in the Call1 (first try), Call2 (second try), or Call3 (third try) columns.

2) Ask if the person answering does not state the name of the facility: Is this the __(name)_____? (Record yes/no (Y/N)in the "verify name" column)

If the answer is NO, please add a row below and write the new name on the line below.

3) Ask : Is your address ___(street address only)_____? (Record yes/no (Y/N) in the "verify address" column)

If the answer is NO, please add a row below and write the new address, including zip code on the line below it.

4) Ask: Is your business a ____(business type)_____? (Record yes/no (Y/N) in the "verify type" column).

If the answer is NO, write the new business type under "business type". There is no need to make a new row (this type was something Kelly inferred and did not come from the Reference USA database).

Please also ask, if there is a question, regarding whether the business is for only men or children. If this is the case, change the business type to "Men only" or "Children only" and skip to #7. There is no reason to document the types of facilities and number if women cannot use them.

5) Here is where you will need to verify any information as listed under the type of facilities (see instructions on pages 1-2 of this document). Please fill in the types of physical activities that are offered at the facility under the columns Facility1, Facility2, Facility3. If there are more than 3 facilities, just keep adding columns. The number columns tell us how many of each facility the places has (called Number1, Number2, and Number3 for the facilities respectively). The following are types of facilities to enter using these words. For example, for aerobic machines there is no need to ask how many there are, but for pools, please ask how many.

Activity Examples	Number to be ascertained
Aerobic Classes (Pilates, Yoga, etc.)	N/A
Basketball	# Hoops
Bowling	N/A
Core Gym (Aerobic machines and weights)	N/A
Golf, Driving Range	N/A
Golf, Private	# Holes
Golf, Public	# Holes
Golf, Mini	# Holes
Horseback Riding	N/A
Martial Arts Classes	N/A
Personal Training Studio	N/A
Pool, Indoor	# Pools
Pool, Outdoor	# Pools
Putt Putt Golf	# Holes
Racquetball/Handball	# Courts
Rock-Climbing Wall	N/A
Skating (Ice/Roller)	# Rinks
Soccer	# Fields
Tennis	# Courts
Track, Indoor	# Tracks
Track, Outdoor	# Tracks
Tumbling Classes	N/A
Volleyball	# Courts
Yoga classes (Stand alone facility)	N/A

6) Does your facility offer child care? Yes or no? (Mark under "**CHILD**" column).

7) Say “Thank you” and end the call.

If no one answers after 3 calls, write “no answer” across the 3 “verify” columns (i.e. verify name, verify address, verify type).

OTHER NOTES - The following rules were used in determining exclusion:

- Any facility that was not deemed appropriate for adult women to exercise was excluded, such as playgrounds and gymnastics/dance studios that were for children only.
- Facilities located on school property were not included since all schools were not queried. This included recreation centers that were included in schools.
- Facilities located inside parks, including recreational centers, were not included on the facility file, but they will be included in the park file.
- If an answering machine indicated that the number called was a residence, and directory assistance said the number was a residence, then the facility was not included.
- Gyms and/or pools that were located in an apartment building, an apartment complex, or a small private community where you need to be a resident to use them were not included.
- Facilities that were found to be stores that sold or rented exercise equipment were deleted.
- Gyms and/or pools located in hotels were not included.
- Associations or clubs that practice on local fields were deleted as long as fields were accounted for elsewhere.
- Dance studios that were for professional dancers or production companies were not included.
- Day spas, massage only facilities and sports or physical therapy facilities were not included.
- Facilities that were for law enforcement training or for student and faculty use only were not included.
- Facilities that were used primarily for youth programs or after school programs were not included.
- Gyms located on church property were deleted since we did not query all churches.
- Facilities listed as recreation facilities, community centers, or country clubs that did not have any facilities for physical activity were not included.
- If the facility was actually a person who gave instruction/classes at individual's homes or offices then it was not included.
- Personal trainers were included if they had a location for clients to come to exercise.
- Individual instructors that were listed, but were then found to teach at gyms, were not counted as individual instructors. Their services were attributed to the gyms they worked at.
- Gyms that offered a timed workout on resistance training machines (e.g. Curves for Women) were coded as 'Circuit Training, Hydraulics'.
- Classes for aerobics, yoga, martial arts, tai chi and pilates had to be currently being taught in order for any of these classes to be coded as yes.

MISSING DATA
All facilities were called at least three times during business hours, on a weeknight and on a weekend day. Based on the facility name and responses from similar facilities some of unreachable facilities were deleted. Others were assigned attributes from similar facilities and still others were given missing data values. Missing data values are indicated by an 'N/A'.

PIN Parks Protocol

The Reference USA database was obtained by Lindy Nelson (see documentation under Reference USAdocumentation.doc). All facilities that resulted from the search were included in the database. Each facility name and information was then evaluated to see if more information was needed. Ginny Lee categorized the places based on the name and determined whether a facility should be verified or not. A web search was first conducted to see if the information was available online. This was done by searching the name of the facility at www.google.com. If information was found on the park, the information was entered into the PIN_ParksInfo Database.

Once information about the park was found, only the activities that PIN women were likely to take part in were entered into the data base. A variable name was created for each applicable activity and was used throughout the PIN study. Variable names can be found under the file name: PIN_STUDY_DATA_DICTIONARY. If the park/facility did not provide any of the activities deemed applicable to PIN women, the park/facility was dropped.

If information on the park was not able to be found online or if specific questions needed to be answered (such as, 'How many tennis courts are available?'), the park was called. If there was no answer, the park was highlighted in yellow to be called again or to find another source of gaining park information. Messages were not left.

If recreation and community centers located on park property included activities applicable to PIN women, the activities were included in the park database. We checked to make sure that none of the facilities were being double counted.

In addition to the PIN PA facility data, the following park locations/activities were identified to be applicable for PIN women. Facilities/activities not noted here, but are a part of the parks, are defined in the PIN PA Calling Protocol.

> **All Purpose Field (FIELD)**: General all purpose fields, 'Athletic Field', also included soccer fields to decrease the chances of overlapping data

Baseball/Softball Fields (BALLFD): As available

Bike Track (BKTRK): Made sure track did not overlap with walking trails

Disc Golf/Frisbee Golf (DISC): Availability of Disc/Frisbee golf baskets/targets

Horseshoes (HORSHO): Availability of horseshoe pits

Walking Trails (TRAIL): Any length of trails were included. Trails that were available for both walkers/bikers and horseback riders were only marked once in the TRAIL category to avoid double counting. If the bike trails were distinct from the walking trail, they were included under a different category called the 'TRAIL'.

Locations that were identified **NOT** to be applicable for PIN women included:

Fishing: Assumed this did not provide enough physical activity for PIN women

Boating (any type): Individuals usually had to provide own boat

Camping: Assumed this did not provide enough physical activity for PIN women

Horseback riding trails: Parks usually require personal horses to be used. Usually overlapped with walking/biking trails

Additional Information

- If a facility had to be reserved beforehand to be use, it was not entered into the database
- Any park on school property or used primarily for school systems were not used

Author: Lindy Nelson (modified by Brian Frizzelle)
Original Document: *ReferenceUSA Documentation.doc*

ReferenceUSA Documentation

- Accessed ReferenceUSA Business Database via UNC library server (http://www.referenceusa.com/bd/BD2.ASP?si=17524271706248&searchPage=BD2.ASP)
- Selected search criteria: 1 – NAICS – 2002 (under Yellow Pages), and 2 – County (under Geography Selects), then entered "Create Search Form"
- Used a selection of NAICS codes that represent full potential list of recreation facilities per each county in study area
    - Counties:
        - Alamance
        - Chatham
        - Durham
        - Orange
    - NAICS codes:
        - 71399
        - 713990
        - 71395
        - 713950
        - 71394
        - 713940
        - 71391
        - 713910
        - 71219
        - 712190
        - 71392
        - 713920
- Records were downloaded as text files @ 50 records per file and assembled per county in an Excel table
- Records were then assembled into one table that covers the study area
- Malls added based on local knowledge and {lookup}
    - List of Malls added:
        - Streets at Southpoint
        - University Mall
        - Northgate Shopping Center

Author: Lindy Nelson (modified by Brian Frizzelle)
Original Document: *SuperPagesDocumentation.doc*

Documentation on Superpages Recreation Facility Data Table

- Downloaded zip code shapefile from UNC Library website: ZIP.shp (location)
- Intersected zip codes with study area boundary
- Exported zip code list (list, location)
- Looked up zip codes on US Postal Service website to determine city names for the study area (http://zip4.usps.com/zip4/citytown.jsp)
- Appended Zip list with city names
- Performed recreation facility search on www.superpages.com
    - Based on MESA_MOP.doc list of facilities search terms, performed business category search (pp.29-32)
    - On search page (yellowpages.superpages.com), entered “sports & recreation” in [keyword] box per each city name in [location] box
    - This search developed the full list of potential sports & recreation categories
    - These categories were then browsed individually and, per record, entered into an excel table (superpages_facilitiesearch.xls) that included:
        - Business Name
        - Phone
        - Address
        - City
        - Zip
        - Category (keyword search term)
    - This table was then appended to the ReferenceUSA data table (RecFacilities_071205.xls)

Appendix IX: Spatial Data Attribute Details

Most of the spatial datasets in the project do not have associated metadata. However, for some of the most commonly used datasets, it is important for users to be able to understand what each of the attribute variables means. This section fills that need by listing the attributes of all important spatial datasets. Due to the very large number of datasets within the database, it was decided to only include some of the more important and regularly used datasets. But if you need information on the attributes of a dataset that are not included in this appendix, email Brian Frizzelle (bgf@email.unc.edu) and he will send you the information you need and make the addition to this document.

Detailed Roads

FIELD NAME	TYPE	DESCRIPTION	CODES
PREDIR	Text	Directional prefix for the address	
PREFIX	Text	Address prefix	
NAME	Text	Street name	
TYPE	Text	Street type (e.g. ST, RD, CT, CIR)	
SUFFIX	Text	Address suffix	
STNAME	Text	Complete street address	
LT_FROM	Long	From house number on the left side	
LT_TO	Long	To house number on the left side	
RT_FROM	Long	From house number on the right side	
RT_TO	Long	To house number on the right side	
ADD_MIN	Long	Minimum house number	
ADD_MAX	Long	Maximum house number	
ALT1_NAME	Text	Alternate street name #1	
ALT2_NAME	Text	Alternate street name #2	
COUNTY1	Text	County in which segment midpoint falls	
COUNTY2	Text	Second county, if segment crosses two counties	
TRACT1	Text	FIPS code for 2000 Census tract in which the segment midpoint falls	
BG1	Text	FIPS code for 2000 Census block group in which the segment midpoint falls	
COMMENTS	Text	Comments brought over from source datasets	
AuditID	Text	ID associated with the street segment	

		audits of 2005 and 2006; multiple segments can share the same *AuditID*	
AuditRd_QM	Text	Indicates if the segment falls within a respondent's ¼-mile Euclidean buffer	No Yes
Audit_Training	Text	Indicates if the segment was included in training for the 2005 or 2006 audit	
AuditRd_Comments	Text	Comments related to audit segments	
Urban	Text	Indicates if the segment falls in a rural or urban census block click here to read the definition of Urban vs Rural areas	Rural Urban
AuditID_Orig	Text	Original *AuditID* value **for internal use only**	
Audit2005_Comments	Text	Comments related to the 2005 audit	
Speed_MPH	Text	Average speed in miles per hour on the segment see below for more details on the assignment of speeds	
Class	Text	Road type category	I – Interstate UH – US Highway SHR – State Hwy or Rte SRD – Secondary Road AR – Access Ramp CDS – Cul-de-sac NR – Nbrhd Road O – Other
Class_Desc	Text	Description of the class if the type is Other	
INDCTR	Long	Indicates if the segment was rated	1 – Complete 99 – Not in Audit
AuditID_wDups	Text	Another old *AuditID* **for internal use only**	
DuplicateReason	Short	Indicates the reason why a segment shares an *AuditID* value with other segments	see below for codes
AuditID_wDupErrs	Text	Another old *AuditID* **for internal use only**	
Aud05_Comments2	Text	More comments related to the 2005 audit	
PIN3_Audit_Complete	Text		
Shape_Length	Double	Length of the segment in feet	
AuditID_20060228	Text	Another old *AuditID* **for internal use only**	
INDCTR_Comments	Text	Comments related to the *INDCTR* field	
Link_ID	Long	Unique ID for each road segment	

LABEL	Text	Label for the roads with route numbers	
LAB1	Text	Label subset #1	
LAB2	Text	Label subset #2	
LAB3	Text	Label subset #3	
YearOfAudit	Short	Year the segment was rated	
Tier	Text	New indicator of road status used in the creation of two new neighborhood types	see below for details
Tier_Comments	Text	Comments about Tier attribution	
BusStopPresent	Short	Indicates if a bus stop is present along the segment	0 – No bus stops 1 – At least 1 bus stop
BusStopNum	Short	Number of bus stops on the segment	
PRES_CDS	Short	Presence of cul-de-sac	see below for details
INT1W	Short	Number of 1-way intersections on segment	
INT2W	Short	Number of 2-way intersections on segment	
INT3W	Short	Number of 3-way intersections on segment	
INT4W	Short	Number of 4-way intersections on segment	
INT5W	Short	Number of 5-way intersections on segment	
INT6W	Short	Number of 6-way intersections on segment	
INTTOT	Short	Total number of intersections on segment	
CDS_Check	Text	Check field for verifying cul-de-sacs **for internal use only**	
CrossSABndry	Short	Indicates if segment crosses outside of the study area	0 – No 1 – Yes
UrbRur_Blockgroup	Text	Indicates if the segment falls in a rural or urban census block group click here to read the definition of Urban vs Rural areas	Rural Urban
SecZoneID	Long	ID of the Secondary Zone polygon in which the segment falls	
TertNbrhdID	Long	ID of the Tertiary Neighborhood to which the segment belongs	

Rules for Attribution of **Speed_MPH** *Field*

- Interstate
  - Speed is *always* **65** mph, regardless of urban or rural
- US Highway
  - Rural: **55** mph
  - Urban: **45** mph
- State Highway or Route
  - Rural: **50** mph
  - Urban: **40** mph
- Secondary Road
  - Rural: **50** mph
  - Urban, Not in a City: **45** mph
  - Urban, In a City: **35** mph
- Neighborhood/Subdivision
  - Speed is *always* **25** mph
- Access Ramp
  - Speed is *always* **40** mph, regardless of urban or rural
- Cul-de-sac
  - Speed is *always* **10** mph, regardless of urban or rural
- Other
  - Choose an appropriate speed
  - Since most of these will likely be alleys and other non-roads, the speed should be low, such as **10** or **15** mph

Explanation of Codes for **DuplicateReason** *Field*

1 – Segments Combined in Audit
2 – Original segment split by extended segment
3 – Original segment split by new road
4 – Apartment complex
5 – Pseudo-node separating segments with different names
6 – New segments added with GPS; merged with original
7 – New segments added from audit comments
8 – Multipart segment to single-part segments
9 – All segments from GPS; only 1 AuditID assigned
10 – All segments from Audit comments; only 1 AuditID assigned
13 – Combination of cases 1 and 3
17 – Combination of cases 1 and 7
18 – Combination of cases 1 and 8
98 – Reason unknown
99 – No Duplicate

Rules for Attribution of Tier *Field*

The **TIER** field in the road dataset was initially attributed using the following criteria:

- **Primary** – Interstates
- **Secondary** – US Highways, NC Highways and Routes, Secondary Roads, Access Ramps
- **Tertiary** – Neighborhood/Subdivision Roads, Cul-de-sacs

It was then refined by David Bergmark and Brian Frizzelle using local knowledge and other data sources (e.g. aerial photos, Google Earth, Google Maps), and basing changes on the following criteria:

- Secondary roads are thoroughfares
- Tertiary roads should be two-lane (one in each direction), undivided, non-thoroughfares.

Explanation of Codes for PRES_CDS *Field*

The PRES_CDS variable indicates the presence/absence of a cul-de-sac or dead-end road segment, or a segment adjacent to a cul-de-sac.

0 – Not a cul-de-sac or dead-end road segment
1 – Either a dead-end road segment or a cul-de-sac that is not represented as a loop
2 – Looped cul-de-sac segment
3 – Road segment adjacent to a looped cul-de-sac

In all situations, there will be a segment with PRES_CDS = 3 connected to a segment with PRES_CDS = 2. Figure IX-1 illustrates the four different codes.

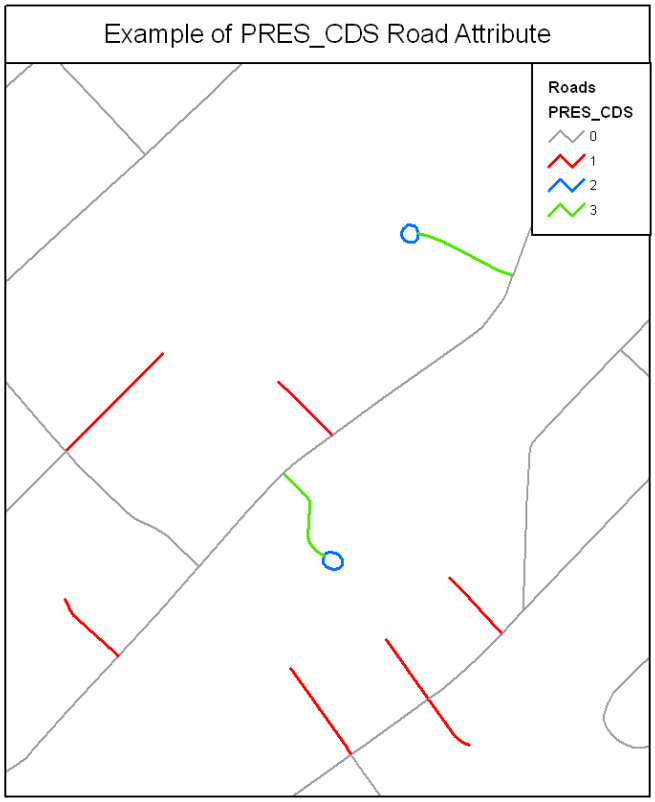


Figure IX-1: Examples of PRES_CD Codes

PinPost Participant Locations

FIELD NAME	TYPE	DESCRIPTION	CODES
POSTID	Long	PIN Postpartum ID	
LOCATION	Text	Indicates if respondent location is from PIN3 pregnancy, postpartum 3-month visit, or postpartum 12-month visit	P – Pregnancy 3M – 3-month visit 12M – 12-month visit
DELIV_DATE	Date	Date of birth	
DATE_VISIT	Date	Date of visit	
ADDRESS	Text	Street address	
CITY	Text	City	
STATE	Text	State	
ZIP	Long	Zip code	
PLUS4	Long	Additional four digits of zip code	
PATID	Long	PIN3 ID	
PP_CODE	Text	Indicates if respondent is part of PIN Postpartum study	1 – In study 99 – Not in study
STATUS	Text	Text description of PP_CODE	InStudy NotInStudy
BG_SAU	Text	FIPS code of respondent's Census block group	
Tract_SAU	Text	FIPS code of respondent's Census tract	
County	Text	County in which respondent location falls	
UniqueID	Text	Unique identifier for each respondent location; Concatenation of POSTID + PATID + LOCATION	
Source	Text	Indicates how the location was acquired. The three options are through geocoding, with a GPS receiver, or manual placement within the GIS software.	Geocode GPS Manual
Corrected	Text	Indicates if the location was hand corrected in the GIS; see Appendix III for details on the hand corrections	No Yes
NearAuditID	Text	The *AuditID* of the nearest road segment	

Supermarkets

FIELD NAME	TYPE	DESCRIPTION	CODES
SPMKT	Text	Unique code for each grocery store First two letters identify county	AG – Alamance CG – Chatham DG – Durham OG – Orange
SHOPPDAT	Long	Indicates whether a woman in the PinPost study has identified the supermarket as a primary shopping location	0 – No 1 – Yes
NAME	Text	Supermarket name	
ADDRESS	Text	Supermarket street address	
CITY	Text	Supermarket city	
ST	Text	Supermarket state	
ZIPCODE	Double	Supermarket zip code	
ZIP_4	Double	Additional +4 digits of zip code	
COUNTY	Text	Supermarket county	
EMPSIZE	Long	Employee size	1 – 1-4 employees 2 – 5-9 employees 3 – 10-19 employees 4 – 20-49 employees 5 – 50-99 employees 6 – 100-249 employees 7 – 250-499 employees
SALES	Double	Amount of sales	1 – less than $500,000 2 – $500,000 - $1 million 3 – $1 million - $2.5 million 4 – $2.5 million - $5 million 5 – $5 million - $10 million 6 – $10 million - $20 million 7 – $20 million - $50 million 8 – $50 million - $100 million
SQFOOT	Double	Square footage of the store	1 – 0-2,499 square feet 2 – 2,500-9,999 square feet 3 – 2,500-9,999 square feet
LATITUDE	Double	Latitude coordinate of the supermarket	
LONGITUDE	Double	Longitude coordinate of the supermarket	

Appendix X: Other Documentation

Crime Data

Author: Annie Lux

Alamance County
Claims to not distribute crime data to the public.

Burlington
Source: City of Burlington Police
Fields: ADDRESS, DESCRIPTION, IBR CODE
# of Records: 7633
Dates: unknown
Crimes included that affect outdoor physical activity:

- Sexual Offense (1st and 2nd degree)
- Assault
    - With a Deadly Weapon
        - Automobile
        - Firearm/Knife
        - Other (glass bottle, etc)
    - With Intent to Kill
- Affray (fighting)
- Aggressive Driving
- Alc. Bev. Public Use
- Arson
- Assault (ALL)
- Attacks by Dangerous Dogs
- Breaking and Entering
    - Felony, vehicle, coin machine (?), business, residence/dwelling
- Burglary
- Burn Personal Property
- CCW – Buying Receiving Weapon
- Careless and Reckless Driving
- Carry Weapon
- Child Abuse/Molestation/Neglect
- Concealment of Merchandise
- Consume Malt Beverage
- DWI
- Death by Motor Vehicle
- Delinquent Juvenile

- Deliver Drugs
- Discharging Firearms
- Disorderly Conduct
- Domestic Trespassing
- Driving left of center
- Drug Violations
- Drunk and Disruptive
- Emitting of Bodily Fluids
- Engaging in Prostitution

Crimes included that do not affect outdoor physical activity:

- Altering or Forging Title/VIN
- Animal Cruelty (?)
- Attempted Suicide
- Beating Cab Fare
- Bigamy
- Bomb Threat
- Child Seatbelt Violation
- Communicating Threats
- Conspiracy to commit a crime/Traffic Drugs
- Contributing to the Delinquency of a Minor
- Conversion by Bailee
- Counterfeiting
- Death Investigation
- Defrauding an Innkeeper
- Disconnecting phone line
- Dispose of Mortgaged Property
- Disturbing School
- Drivers license restriction
- Embezzlement
- Expired Tag
- Extortion
- Failure to Vaccinate Animal
- False Imprisonment
- False Pretense

Carrboro
Source: Ruth Heaton, GIS Specialist
Fields: LOCATION, OFFENSE CODE, OFFENSE DESCRIPTION, DATE, OCA NUMBER
# of Records: 13080
Dates: 1/1/2000 – 3/4/2005

Crimes included that affect outdoor physical activity:

- Aggravated Assault
    - With Sexual Motives
- All other offenses
    - Against Family
    - Animal Cruelty
    - Arguing
    - B+E Auto
    - Communicating Threat
    - Domestic
    - Harassment
    - Loitering
    - Public Urination
    - Solicitation for Sex
    - Stalking
    - Suspicious person
    - Tampering with Vehicle
- All other sex offenses
- All Traffic
- Arson
- Breaking/Entering Vehicle
- Burglary
- Liquor Law
    - All other
- Calls for Service
    - Animal bite
    - Attempt to enter vehicle
    - Child Custody dispute
    - Damage to vehicle
    - Dog Fight
    - Domestic Dispute
    - Illegal Burning
    - Illegal Dumping
    - Neighbor Trashed his property
    - Suspicious Activity/condition/person/vehicle
    - Tampering with Vehicle
    - Undisciplined Juvenile
    - Violation of a 50B Order (restraining order)
- Child Abuse/Molestation/Neglect
- City Ordinance Violations (?)
- Criminal Damage to Property
- Disorderly Conduct
- Disturbing the Peace

- Drug Violations
- Drunk and Disruptive
- DWI
- Fighting
- Indecent Exposure
- Kidnapping
- Larceny
- Missing Persons
- Motor Vehicle Theft
- Murder & Non-negligent manslaughter
- Other Weapons Violations
- Peeping Tom
- Possessing/Concealing
    - Liquor
    - Stolen Property
    - Weapons
- Prostitution
- Rape
- Robbery
- Simple assault
- Sodomy
- Speed to elude
- Transporting weapons
- Trespassing
- Using Weapons
- Using/Consuming liquor

Sfhd

- False Imprisonment
- False information
- Harassing Phone Calls
- Interfering with emergency communication
- Malicious conduct by a prisoner
- No insurance
- Possession of an altered drivers license
- Refuse to produce license
- Buying/receiving liquor
- Calls for Service (ALL OTHER)
- Contempt of Court
- Counterfeiting
- Embezzlement
- Escape from Custody
- Forgery

- Fraud
- Non-Criminal Detainment
- Obscene Material/Pornography
- Parole & Probations Violations
- Selling
- Suicide

Chapel Hill
Source: Jane Love/Town of Chapel Hill
Fields: DATE, INCIDENT ID, ADDRESS (some have cross streets) UCR code (some are 2 digits and some are 4 digit), CHARGE DESCRIPTION
# of Records: 20087
Dates: 2/11/99 – 12/30/04
Crimes included that affect outdoor physical activity:

- Robbery
- Burglary
- Damage to Property
- Breaking and Entering (residential
- Assault (all types)
- Rape (Attempted, Forcible, sexual offense
- Larceny
- Possession (of cocaine, marijuana
- Auto Theft
- Child Abuse
- Concealing Merchandise
- Damage to Auto/Property
- Domestic
- Drug (Investigation/Violation/open air sales/Paraphernalia
- Home Invasion
- Motorcycle Theft
- Murder/Non-Negligent Manslaughter
- Purse Snatching
- Road Rage
- Sexual Assault
- Threat by Pointing Gun
- Vandalism/Willful damage to property
- Vehicle (egged, keyed, theft)

Crimes included that do not affect outdoor physical activity:

- Communicating Threat
- Credit Card Theft
- Drug Overdose

- Gas Drive Off (?)
- Golf Cart
- Information
- License Plate
- Obtaining Property by False Pretense
- Prescription Fraud
- Safe Cracking
- Tags Stolen

Chatham County

- don smith – 542.2811 x. 229

Durham

Some of the data overlaps between these two sources. The overlapping fields are DATE and LOCATION.

Source: Durham Online Crime Mapper
Fields: DATE, LOCATION, GENERAL TYPE CRIME, SPECIFIC CATEGORY
# of Records: 16193
Dates: Jan 1, 2004 – Jan 24, 2005
Crimes included that affect outdoor physical activity:

- Arson
- Assault Offenses
    - Simple
    - Aggravated
- burglary/breaking and entering,
- Homicide Offenses (Murder and Non-negligent Manslaughter)
- Larceny/Theft Offenses
    - Theft from Motor Vehicle
    - Theft of motor vehicle parts
    - Shoplifting
    - Theft From Building
    - Purse-snatching
    - All Other Larceny
- Motor Vehicle Theft

Crimes included that do not affect outdoor physical activity: NONE

Source: Gun Related Crimes
Fields: DATE, LOCATION, CRIME DESCRIPTION, GUN TYPE
# of Records: 449
Dates: 12/10/03 – 2/24/05

Crimes included that affect outdoor physical activity:

General

- Breaking and Entering
- Assault
    - with a Deadly Weapon
        - Inflicting Serious Injury
    - by Pointing a Gun
    - Aggravated
- Carrying a Concealed Weapon
    - On School Property
- Possession of:
    - Firearm
    - Weapon of Mass Destruction
    - Stolen Goods
    - Stolen Firearm
        - By a convicted felon
- Kidnapping
- Domestic Violence
- Robbery
    - Armed
    - With a Dangerous Weapon
    - Strong-arm
- Resist Delay and Obstruct Law Enforcement Officer
- Communicating Threats
- Resisting a Police Officer
- Discharging a Firearm in City Limits
- Shooting into an Occupied Dwelling
- Larceny
    - Felony
    - Of Motor Vehicle
- Maintain Dwelling
- CCG
- Going Armed to Terror of the Public

Incivilities

- Possession of:
    - Cocaine
    - Marijuana
    - Schedule VI
- Deliver Schedule II
- Possession with Intent to Sell or Deliver Schedule II/Cocaine/Marijuana
- Trafficking Cocaine

Traffic related

- Driving While Impaired

- Driving with License Revoked
- Disguised Registration
- Failure to Use Headlights
- Open Container

Crimes included that do not affect outdoor physical activity:

- Interfering w/ Emergency Communications
- No Seat Belt

HUD Housing & Affordable Housing

Author: Annie Lux

Data Sources – Housing

Types of Affordable Housing

HUD (Public Housing)

Serves *very low income* residents. HUD has not funded this type of development since 1994.

Section 8 (project based) – A public housing authority can set aside 20% of its voucher assistance program to specific housing units if the owner agrees to rehabilitate or construct new units.

Section 8 (tenant based) – Vouchers are available to qualified very low income families (below 50% of AMI), the elderly, and the disabled. Seventy-five percent of vouchers administered must go to recipients under 30% of AMI. Recipients can choose any housing that meets the requirements of the program and voucher use is not limited to units in subsidized projects.

LIHTC

Low-Income Housing Tax Credits are available for the construction and rehabilitation of low income units. They are the most popular program for providing affordable housing. The HUD User database covers projects placed in service between 1987 and 2001. The countrywide database contains information on 20,700 projects and 1,041,000 housing units. The database claims to be the only complete national source of this information.

The database includes project address, number of units and low-income units, number of bedrooms, year the credit was allocated, year the project was placed in service,

whether the project was new construction or rehab, type of credit provided, and other sources of project financing. The database has been geocoded, enabling researchers to look at the geographical distribution and neighborhood characteristics of tax credit projects.

43 properties were found in the study area

LIHTC information is available in a shapefile

HUD
http://www.hud.gov/apps/section8/index.cfm
This search covers project-based Section 8 assistance. It does not return usage of section 8 vouchers (as those can be used anywhere)

http://www.huduser.org/publications/pubasst/subsid.html

73 properties were found in the study area.

Dates
Data is current

NCHFA

1. North Carolina Housing Finance Agency list of housing

   Type of Housing
   Housing constructed with low income tax credits. Housing financed with tax credits is required to remain affordable for fifteen years. Affordability varies by project, but is generally affordable tot people making thirty to sixty percent of the area median income (AMI)

   37 Properties were found in the study area

   Dates: This includes all privately-owned apartments that the North Carolina Housing Finance Agency has financed since 2000. **This should show some housing not available in the LIHTC database**

2. Allocated Tax Credits
   These properties have been allocated federal and/or state Low Income Housing Tax Credits that will be used to construct affordable housing.

   5 properties were found in the study area.

   Dates: Tax Credits were allocated between 2000 and 2004
   Note, some of this housing has not yet been constructed

Durham Affordable Housing Coalition
Type of Housing
The website lists apartments that accept Section 8 vouchers. This likely means that low-income residents live there. The listing does not distinguish project- vs. tenant-based apartments.

Dates
Data is from 8/25/04.

26 Properties were found in the study area

Schools

Schools Data

- List of schools for the study area were obtained from the National Center for Education Statistics - http://nces.ed.gov/
- Obtained and compiled from 2/8/05 to 2/13/05
    - Private Schools were located and datasets downloaded by county from http://nces.ed.gov/surveys/pss/privateschoolsearch/
    - Public Schools were located and datasets downloaded by county from http://nces.ed.gov/ccd/schoolsearch/
    - Colleges were looked up individually by study area zip codes and compiled from http://nces.ed.gov/globallocator/
- Public Schools - Source: CCD Public school data 2002-2003 school year http://nces.ed.gov/ccd/aboutCCD.asp
- Private Schools - Source: PSS Private School Universe Survey data for the 2001-2002 school year http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2001330
- Colleges – Source: IPEDS College data 2003-2004 http://nces.ed.gov/ipeds/cool/
- The file covers the five counties of Alamance, Chatham, Durham, Orange and Wake – North Carolina

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Traffic Noise

Author: Annie Lux

Noise

Perceived noise is based on three factors: 1. Traffic Volume, 2. Traffic Speed, 3. Number of trucks in the traffic flow. Mapping of noise contours is generally done with software developed by FHWA called the Traffic Noise Model. The Traffic Noise Model has a related Traffic Noise Lookup program used for smaller scale projects that generates perceived noise at any point based on traffic characteristics. It does not generate contours.

A review of mathematical models for generating traffic noise contours did not produce much information. A formula discussed by the NCHRP[3], based on an infinitely long line source on flat, unobstructed terrain with vehicles distributed evenly along the road is as follows.

L_{50} = 10 log V – 15 log D + 30 log S + 10 log [tanh (1.19 x 10^{-3}(VD/S)] + 29

V = volume of traffic in vehicles per hour (vph)
S = average vehicle speed in miles per hour (mph)
D = distance from centerline of roadway to sound receptor

Unfortunately, this equation does not factor in truck composition. To map this equation, one would need to solve for D, and set L_{50} at a level that noise is perceived ot be a nuisance (see FHWA Guidelines below).

FHWA's Standards are as follows:

Noise Abatement Criteria (NAC) Hourly A-Weighted Sound Level - decibels (dBA)*			
Activity Category	Leq(h)	L10(h)	Description of Activity Category
A	57 (Exterior)	60 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67	70	Picnic areas, recreation areas, playgrounds, active

[3] Ortolano, Leonard. *Environmental Regulation and Impact Assessment*. John Wiley & Sons, Inc.: New York, 1997. p. 505.

	(Exterior)	(Exterior)	sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	75 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	--	--	Undeveloped lands.
E	52 (Interior)	55 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

- Either L_{10}(h) or L_{eq}(h) (but not both) may be used on a project.

Definitions of terms are as follows:

L_{10}. The sound level that is exceeded 10 percent of the time (the 90th percentile for the period under consideration. (L_{50} is the 50th percentile, etc)

L_{10}(h). The hourly value of L10.

L_{eq}. The equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same time period.

L_{eq}(h). The hourly value of Leq.

Traffic Volume

Author: Annie Lux

The point file received from Jeremy Raw at the Durham MPO contains 2001 station locations. 2002 and 2003 volumes were merged into the 2001 point file using uniq_id as the identifier. Further station locations are included in the Durham point file that contains volumes taken as part of traffic impact studies. These use the same methodology for collecting volumes as the NCDOT counts.

NCDOT is in the process of updating the point shapefile, and the process should be completed by August 2005. This file will contain stations used for the 2004 counts and will include 2003 volumes. The file will be updated with 2004 volumes when they are published by the DOT. Larry Wikoff at NCDOT is the contact or this information.

It will be helpful to merge the point locations to the road file. This process can be done manually, but is labor intensive. Due to the segmentation of the road file, using a spatial join in ArcMap does not assign traffic volumes to the length of the road.

Note that the data files have not yet been incorporated into the project geodatabase. They are still in shapefile format in the directory *\PIN\Postpartum\Temp\Traffic Counts* and its subdirectories.

Urban and Rural Classification

Author: Annie Lux

For Census 2000, the Census Bureau classifies as "urban" all territory, population, and housing units located within an urbanized area (UA) or an urban cluster (UC). It delineates UA and UC boundaries to encompass densely settled territory, which consists of:

- core census block groups or blocks that have a population density of at least 1,000 people per square mile and
- surrounding census block groups or blocks that have an overall density of at least 500 people per square mile

In addition, under certain conditions, less densely settled territory may be part of each UA or UC.

The Census Bureau's classification of "rural" consists of all territory, population, and housing units located outside of UAs and UCs. The rural component contains both place and non-place territory. Geographic entities, such as census tracts, counties, metropolitan areas, and the territory outside metropolitan areas, often are "split" between urban and rural territory, and the population and housing units they contain often are partly classified as urban and partly classified as rural.

Appendix XI: Source Websites

Federal Government Websites

U.S. Census Bureau
http://www.census.gov

Housing & Urban Development (HUD)
http://www.hud.gov

HUD Low-rent Apartment Search
http://www.hud.gov/apps/section8/index.cfm

HUD Subsidized Housing Projects' Geographic Codes, Form HUD-951
http://www.huduser.org/publications/pubasst/subsid.html

HUD Enterprise GIS (EGIS)
http://hudemaps2.esri.com/egis/

State Government Websites

North Carolina Department of Transportation (NCDOT) GIS Website
http://www.ncdot.org/planning/statewide/gis/

NCDOT GIS Distribution Center
http://www.ncdot.org/planning/tpb/gis/DataDist/DataDist.html

North Carolina General Assembly Redistricting Data
http://www.ncleg.net/redistricting/Data/Data.html

North Carolina Floodplain Mapping Project
http://www.ncfloodmaps.com

County Government Websites

Alamance County GIS website
http://www.alamance-nc.com/gis/

Chatham County Parks & Recreation Department
http://www.co.chatham.nc.us/RecreationDepartment/Recreation.htm

Walking Trails in Chatham County, NC
http://www.co.chatham.nc.us/RecreationDepartment/ChathamCountyTrails.htm

Chatham County GIS FTP site
ftp://www.co.chatham.nc.us/

Municipal Government Websites

Town of Carrboro Digital GIS Data Download
http://www.ci.carrboro.nc.us/GIS/download.htm

Town of Carrboro Parks & Recreation Department
http://www.ci.carrboro.nc.us/rp/parks.htm

Town of Carrboro Park Facilities Document
http://www.ci.carrboro.nc.us/rp/PDFs/Carbparks2003.pdf

Burlington Recreation & Parks Department
http://burlingtonnc.gov/index.asp?NID=55

Burlington Recreation Chart Document
http://burlingtonnc.gov/documents%5CRecreation%20&%20Parks/Recreation%20Chart.pdf

Durham GIS
http://www.ci.durham.nc.us/departments/gis/

Durham Interactive Mapping Applications
http://gisweb2.ci.durham.nc.us/sdx/imap_launch.html

Durham Parks Locator
http://ci.durham.nc.us/gis_apps/parkapp/mainmap.cfm

Town of Siler City
http://www.silercity.org/siler/html/SilerMain.html:

City of Mebane
http://www.cityofmebane.com/newsite/mod.php?mod=userpage&menu=100403&page_id=11

Town of Elon Recreation
http://www.elonnc.com/elon%20recreation.htm

University Websites

North Carolina State University GIS Academy
http://www.gisacademy.ncsu.edu/index.php
Private Company Websites

Search Engines

Google
http://www.google.com

Mapping Websites

Google Maps
http://maps.google.com

Other Websites

Attractions – Parks & Recreation, Burlington Alamance County Area website
http://www.burlington-area-nc.org/categories.asp?id=85

Triangle Transit Authority
http://www.ridetta.org/Home/index.html

Appendix XII: Glossary of Terms

The definitions in this glossary were taken from the following sources:

- ESRI's GIS Dictionary (support.esri.com/index.cfm?fa=knowledgebase.gisDictionary.gateway) [ES]
- GIS Lounge GIS Dictionary (http://gislounge.com/category/glossary/) [GL]
- Atlas of South Australia (www.atlas.sa.gov.au/) [SA]
- MacDonald, Andrew. 2001. *Building a geodatabase*, ESRI Press, Redlands, CA. [BG]
- U.S. Census Bureau's American FactFinder (factfinder.census.gov/home/en/epss/glossary_c.html) [FF]
- PIN Postpartum Study [PP]
- Brian Frizzelle [BF]

arc – A coverage feature class that represents lines and polygon boundaries. One line feature can contain many arcs. Arcs are topologically linked to nodes and to polygons. Their attributes are stored in an arc attribute table (AAT). Nodes indicate the endpoints and intersections of arcs; they do not exist as independent features. Together, the from-node and the to-node define the direction of the arc. [ES]

attribute – Information about a geographic feature in a GIS, usually stored in a table and linked to the feature by a unique identifier. For example, attributes of a river might include its name, length, and average depth. [ES]

attribute field – 1) A column in a table that stores the values for a single attribute. [ES] 2) The place in a database record, or in a graphical user interface, where data can be entered. [ES]

block – see *census block*

block group – see *census block group*

buffer – A zone of a specified distance around features in a coverage. Buffers can be set at constant or variable distance based on feature attributes. The resulting buffer zones form polygonal coverages. [GL]

census block – A subdivision of a census tract (or, prior to 2000, a block numbering area), a block is the smallest geographic unit for which the Census Bureau

tabulates 100-percent data. Many blocks correspond to individual city blocks bounded by streets, but blocks -- especially in rural areas - may include many square miles and may have some boundaries that are not streets. The Census Bureau established blocks covering the entire nation for the first time in 1990. Previous censuses back to 1940 had blocks established only for part of the nation. Over 8 million blocks are identified for Census 2000. [FF]

census block group – A subdivision of a census tract (or, prior to 2000, a block numbering area), a block group is the smallest geographic unit for which the Census Bureau tabulates sample data. A block group consists of all the blocks within a census tract with the same beginning number. [FF]

census feature class codes – A census feature class code (CFCC) is used to identify the most noticeable characteristic of a feature. The CFCC is applied only once to a chain or landmark with preference given to classifications that cover features that are visible to an observer and a part of the ground transportation network. Thus, a road that also is the boundary of a town would have a CFCC describing its road characteristics, not its boundary characteristics.
The CFCC, as used in the TIGER/Liner files, is a three-character code. The first character is a letter describing the feature class; the second character is a number describing the major category; and the third character is a number describing the minor category. [FF]

census tract – A small, relatively permanent statistical subdivision of a county delineated by a local committee of census data users for the purpose of presenting data. Census tract boundaries normally follow visible features, but may follow governmental unit boundaries and other non-visible features in some instances; they always nest within counties. Designed to be relatively homogeneous units with respect to population characteristics, economic status, and living conditions at the time of establishment, census tracts average about 4,000 inhabitants. They may be split by any sub-county geographic entity. [FF]

CFCC – see *Census feature class codes*

clip – A command that extracts the features from one layer that reside entirely within a boundary defined by features in another layer. [ES]

coordinate system – The system used to measure horizontal and vertical distances on a planimetric map. A common coordinate system is used to spatially register geographic data for the same area. [GL]

coverage – A vector data storage format for storing the location, shape and attributes of geographic features. One of the primary vector data storage formats for ArcInfo. [BG]

contour line – A line drawn on a map that connects points of equal elevation above a datum, usually sea level.

datum – In the most general sense, any set of numeric or geometric constants from which other quantities, such as coordinate systems, can be defined. A datum defines a reference surface. There are many types of datums, but most fall into two categories: horizontal and vertical. [ES]

DEM – see *digital elevation model*

digital elevation model – A topographic surface arranged in a data file as a set of regularly spaced x, y, z coordinates where z represents elevation. [GL]

digital orthophoto quadrangle – A computer generated, uniform-scale image created from an aerial photograph. Digital orthophoto quadrangles are true photographic maps in which the effects of tilt and relief are removed by a mathematical process called transformation or rectification. The uniform scale of a DOQ allows accurate measurement of distances. [ES]

digital orthophoto quarter quadrangle – A digital orthophoto quadrangle (DOQ) divided into four quadrants. [ES]

DOQ – see *digital orthophoto quadrangle*

DOQQ - see *digital orthophoto quarter quadrangle*

feature – A representation of a real-world object in a layer on a map. [BG]

feature class – An object that stores features and has a field of type geometry. [BG] This is the basic element of feature storage in a geodatabase. [BF]

feature dataset – A collection of feature classes that share the same spatial reference. Because the feature classes share the same spatial reference, they can participate in topological relationships with each other…. [BG]

geocoding – The process of creating geometric representations for locations (such as point features) from descriptions of locations (such as addresses). [BG]

geodatabase – A geographic database that is hosted inside a relational database management system that provides services for managing geographic data. [BG]

Global Positioning System – A constellation of radio-emitting satellites deployed by the U.S. Department of Defense and used to determine location on the earth's

surface. The orbiting satellites transmit signals that allow a GPS receiver anywhere on earth to calculate its own location through triangulation. The system is used in navigation, mapping, surveying, and other applications in which precise positioning is necessary. [ES]

GPS – see *Global Positioning System*

Grid – The native raster format for ArcInfo. [BF]

horizontal datum – A geodetic reference point that is the basis for horizontal control surveys and consists of five quantities: latitude, longitude, the azimuth of a line from the reference point, and two constants that are the parameters of the reference ellipsoid. The datum may extend over an area of any size.

layer – A collection of similar geographic features – such as rivers, lakes, counties, or cities – of a particular area or place for display on a map. A layer references geographic data stored in a data source, such as a coverage, and defines how to display it. [BG]

LIDAR – See *light intensity detection and ranging*

light intensity detection and ranging – A remote sensing technique that uses lasers to measure distances to reflective surfaces. [ES]

line – On a map, a shape defined by a connected series of unique x,y coordinate pairs. A line may be straight or curved.

metadata – Information about the content, quality, condition, and other characteristics of data. [FF]

MrSID – (Acronym for *Multi-resolution Seamless Image Database*) A raster compression format created by LizardTech. It significantly reduces the size of large high-resolution images (such as high-resolution aerial and satellite photographs) to a fraction of their original file size, and still manages to maintain the original image quality and integrity. [SA]

neighborhood – An area around a person or location. For this project, we have four different neighborhood types: ¼ mile Euclidean buffers, 1 mile Euclidean buffers, ¼ mile network service areas, and 1 mile network service areas.

network – An interconnected set of points and lines that represent possible paths from one location to another. For geometric networks, this consists of edge features, junction features, and the connectivity between them. For network datasets, this consists of edge, junction, and turn elements and the connectivity between them.

For example, an interconnected set of lines representing a city streets layer is an example of a network. [ES]

network analysis – Any method of calculating locations and relationships in a network; solving network problems such as traversability, rate of flow, or capacity. [ES]

network dataset – A collection of topologically connected network elements (edges, junctions and turns) that are derived from network sources, typically used to represent a linear network, such as a road or subway system. Each network element is associated with a collection of network attributes. Network datasets are typically used to model undirected flow systems. [ES]

parcel – A tract or plot of land. The term is usually used in the context of land use or legal ownership. [ES]

planimetrics / planimetric map – A map that gives only the x,y locations of features and represents only horizontal distances correctly. [ES]

point – A geometric element defined by a pair of x,y coordinates. [ES]

polygon – On a map, a closed shape defined by a connected sequence of x,y coordinate pairs, where the first and last coordinate pair are the same and all other pairs are unique. [ES]

raster – Represents any data source that uses a grid stricture to store geographic information.

relationship class – Objects in a real-world system often have particular associations with other objects in the database. These kinds of associations between objects in the geodatabase are called relationships. Relationships can exist between spatial objects (features in feature classes), non-spatial objects (rows in a table), or between spatial and non-spatial objects. While spatial objects are stored in feature classes, and non-spatial objects are stored in object classes, relationships are stored in relationship classes. [BG]

road segment – A portion of a road that falls between two intersections or between an intersection and the end of the road. [PP]

shapefile – A vector data storage format for storing the location, shape, and attributes of geographic features. [BG]

tax parcel – see *parcel*

township – A governmental subdivision, which may vary from the standard size and shape. [ES]

tract – see *census tract*

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