

Corridor Analysis Tool

GIS LAYERS AND FEATURE VALUING WORKSHEET

Background

The worksheet is for ranking and valuing evaluation criteria for the Corridor Analysis Tool (CAT). The GIS data are organized by layers which represent major data categories (wetlands, mitigation banks/sites, roadways, etc.). Within each layer are features that describe the layer in greater detail. For example, the wetlands layer contains features such as "Estuarine Forest", "Freshwater Marshes", etc. The individual layers are assigned a percentage value representing their influence or importance, relative to other layers. The layer influence values must total 100 percent for all layers being evaluated. The percent influence values must be whole numbers. The features are valued from 1 to 10, with 1 being the feature that is least important to avoid and 10 being the most important to avoid. For example, Upland Agriculture would have a low value, while a Freshwater Marsh would have a high value. In other words, the lower the value the more desirable that feature type is for roadway siting, the higher the value the more undesirable.

Instructions: The values identified in the "Layer Influence" and "Scale Value" columns represent a first look by several project team members. Please review the values and based on your judgment modify them as necessary. The September 23, 2004 ACT meeting will focus on getting your input for the valuing and ranking process. Please come prepared to discuss this important process.

Other Comments:

Status - Status indicates if the GIS data is considered appropriate for corridor evaluation. Appropriateness considered data quality and duplication, and negative, positive or no impacts to the environment, roadways, infrastructure and socioeconomic issues. Three identifiers are used for Status, "In" means the data will be used; "Out" means the data is not used; or "Constraint" which is defined below.

Constraint - Constraint features are removed from consideration by the CAT. No roadway can be sited through a constraint feature.

Buffers - Some features, especially point features, may require a buffer to ensure avoidance. For example, it might be desirable to avoid encroaching within a specified buffer distance of a protected species habitat.

D. Demographic/Socioeconomic - These layers have been broken down into features. The features represent high, moderate or low density areas with an appropriate scale value for each density level. The range of densities will be determined based on the evaluation of the minority, low income and population densities for the project area.

Layer No.	Status	Layer Name	Layer Influence (%)	Feature (Sub Layer)	Attribute Ranking (1 to 10)	Buffer	Comments
A. Environmental							
1a	In	Wetlands (NWI based)	40	Freshwater Lakes & Impoundments	3		
				Rivers & Canals			
				Artificial/Canal	5		
				Natural	8		
				Ponds & Borrow Pits	2		
				Impacted	8		
				Not Impacted			
				Unvegetated Flats	2		
				Not Impacted	7		
				Savannahs & Wet Meadows	7		
				Impacted	10		
				Not Impacted	7		
				Freshwater Marshes	10		
				Not Impacted	10		
				Aquatic Beds	2		
				Impacted	10		
				Pine Savannahs & Wet Flatwoods	4		
				Not Impacted	8		
				Bottomland Hardwoods	6		
				Impacted	9		
				Not Impacted	6		
				Hardwood Swamp	6		
				Impacted	9		
				Not Impacted	4		
				Bay Forests	7		
				Impacted	4		
				Not Impacted	7		
				Evergreen Shrub Bogs/Pocosins	4		
				Impacted	7		
				Not Impacted	3		
				Deciduous Shrub Swamps	5		
				Impacted	3		
				Not Impacted	5		
				Flooded Swamp/Beaver Ponds	3		
				Impacted	5		
				Not Impacted			
				Carolina Bays			Aerial photography will be used to identify non
				Uplands (NWI based)			
				Upland Residential	1		
				Upland Commercial/ Services	1		
				Upland Industrial	1		
				Upland Transportation & Utilities	1		
				Upland Industrial & Commercial Complex	1		
				Other Urban	1		
				Upland Agriculture (Cropland/Pasture)	1		
				Upland Orchards/ Nurseries	1		
				Upland Confined Feed Operations	1		
				Upland Herbaceous Rangeland	1		
				Deciduous Forest	5		
				Upland Evergreen Forest	1		
				Upland Evergreen Forest (Irregularly Flooded)	1		
				Upland Mixed Forest	4		
				Quarries	1		
				Unknown (non-categorized uplands)	1		
				Little Pee Dee River	10	Buffer	
				Streams	8		
				Streams (3rd Order)			May use later in process for more detailed analyses
2a	Out			Soils			
3a	Constraint	Mitigation Banks & Sites					Rank Scale Value High
4a	In	State Species of Concern	10		10		Add subcategories to Species of Concern with ranking to be
5a	Constraint	Federal and State Threatened & Endangered Species				Buffer	Buffer based on species' habitat requirements
6a	In	Archaeology Sites					
	Constraint						Listed on NRHP/Eligible
	Constraint						Potentially Eligible for NRHP
	Out						Others
7a	In	Historic Resources					
	Constraint						Listed on NRHP/Eligible
	Constraint						Potentially Eligible for NRHP
	Out						Others
9a	Constraint	Heritage Preserves					
10a	Constraint	Parks (Federal, state and local)					Cross check with Land Stewardship; Duplication
11a	Constraint	Wildlife Refuges					Duplication; Data in Heritage Preserves
12a	Constraint	Federal Lands (>640 acres)					None present in study area
13a	Constraint	Land Stewardship/DNR Gap Analysis					Cross check with Heritage Preserves
14a	Constraint	Hazardous Sites					Use only NPS/SPL





Corridor Analysis Tool (Continued)						
GIS LAYERS AND FEATURE VALUING WORKSHEET						
Layer No.	Status	Layer Name	Layer Influence (%)	Feature (Sub Layer)	Attribute Ranking (1 to 10)	Comments
15a	Constrain	Landfills				
16a	Out	NPDES Sites				No impact to project
19a	Out	Watersheds				No impact to project
20a	Constrain	Flood Plain for Great Pee Dee River				Great Pee Dee River designated Constraint; others out
21a	Out	Flood Plains				All other flood plains
23a	Constrain	Mines/Geologic Features				
B. Roadways			50			
1b	In	Roads	10	Urban		Break out into Functional Class and Urban/Rural
				Principal Arterial - Other	1	4 or more lanes
				Minor Arterial	2	2 to 4 lanes
				Major Collector	2	2 to 3 lanes
				Minor Collector	3	2 lanes
				Local	3	2 lanes
				Rural		
				Principal Arterial - Other Freeways & Expressways	1	4 or more lanes
				Principal Arterial - Other	1	4 or more lanes
				Minor Arterial	3	2 lanes
				Collector	3	2 lanes
				Local	3	2 lanes
C. Infrastructure			10			
1c	In	Infrastructure	20			Buffer
	Out			Railroads		No impact to project
	Out			Transmission Lines		No impact to project
	Out			Oil Pipelines		No impact to project
	Out			Bridges		No impact to project
	Constrain			Airports		
	Out			Buildings (industrial/vacant)		No impact to project
	Out			Dams (Haz)		No impact to project
	In			Fire Stations	6	Rank Scale Value Med/High
	In			Administrative Buildings (government)	4	Rank Scale Value Low/Med
	In			Churches	9	Rank Scale Value High
	In			Community Facilities (City Hall, etc.)	8	Rank Scale Value High
	In			Health Facilities (licensed)	5	Rank Scale Value Med
	In			Hospitals	8	Rank Scale Value High
	In			Libraries	8	Rank Scale Value Med
	In			Mental Health Facilities	5	Rank Scale Value Med
	Constrain			Schools		
	Constrain			Cemeteries		
	In			Incorporated Areas	6	
	Constrain			Municipalities / Major		Duplication; Used Incorporated Areas data
	In			Sewer Infrastructure	9	
	Out			Pipe lines		No impact to project
	In			Treatment Plants	9	Rank Scale Value High
	Out			Discharge Points		No impact to project
	In			Water Infrastructure	9	
	In			Surface Withdrawal Locations	8	Rank Scale Value High
	In			Storage Sites	7	Rank Scale Value Med
D. Demographic/Socioeconomic			20			
1d	In	Minority Areas/Density	5			
				High Density	9	Determine density values/range and Scale Value
				Moderate Density	6	Determine density values/range and Scale Value
				Low Density	2	Determine density values/range and Scale Value
2d	In	Low Income Areas/Density	5			
				High Density	9	Determine density values/range and Scale Value
				Moderate Density	6	Determine density values/range and Scale Value
				Low Density	2	Determine density values/range and Scale Value
3d	In	Population Density	10			
				High Density	9	Determine density values/range and Scale Value
				Moderate Density	6	Determine density values/range and Scale Value
				Low Density	2	Determine density values/range and Scale Value
Demographic/Socioeconomic Total			20			
Grand Total			100			