

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

MINISTRY OF PUBLIC WORKS, TRANSPORT AND HOUSING (SOPTRAVI)

MINISTRY OF INTERNATIONAL COOPERATION (SETCO)

NATIONAL EMERGENCY COMMITTEE (COPECO)

NATIONAL SERVICE AUTHORITY FOR WATER SUPPLY AND SEWERAGE (SANAA)

MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT (SERNA)

MUNICIPALITY OF THE CENTRAL DISTRICT (AMDC)

THE STUDY

**ON FLOOD CONTROL AND LANDSLIDE PREVENTION
IN TEGUCIGALPA METROPOLITAN AREA
OF THE REPUBLIC OF HONDURAS**

FINAL REPORT

GIS OPERATION MANUAL

MAY 2002

**PACIFIC CONSULTANTS INTERNATIONAL
NIKKEN CONSULTANTS, INC.**

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- **GIS DIGITAL DATABASE STRUCTURE EXPLANATION**
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GIS DATA LIST

GIS DATA List

Master Directory: Computer>>>> PORDER C:\Teguci\Y

1. Digital Mapping and Geography

	Vector			GRID (10*10m Cell)	
	Items	Shape File Name		Items	Grid File Name
DM	2001 DM	Roads	Final_data\shapes\digital_mapping_roads	-	-
	(Except Contour)	Rivers	Final_data\shapes\digital_mapping_rivers	-	-
		Annotations	Final_data\shapes\digital_mapping_anno	→	
Geography	1996 DM (Contour)	1 m. interval	Final_data\shapes\curvas_ig_1996	-	Final_data\grids\ig_96_dem
	2001 DM (Contour)	2.5 m. interval with elevation points	Final_data\shapes\Aerocarta_After_June8th\Aero_contours_with_ele_points	→	Elevation (1 m. grid cell size) Final_data\grids\Aerocarta_After_June8th\ aerodem_p
		2.5 m. interval without elevation points	Final_data\shapes\Aerocarta_After_June8th\Aero_contours_without_ele_points	→	Elevation (1 m. grid cell size) Final_data\grids\Aerocarta_After_June8th\ aerodem
	-	-	-	Slope	Final_data\grids\slope_10m
	-	-	-	Aspect	Final_data\grids\aspect_10m
3D Elevation Models TIN Format	2.5 m. interval with elevation points	3ds\ Aerocarta_After_June8th\TIN_sipoints			
	2.5 m. interval without elevation points (Spot Heights)	3ds\ Aerocarta_After_June8th\TIN_nopoints			

2. Geology

	Vector			GRID (10*10m Cell)			
	Items	Shape File Name		Items	Grid File Name		
Geology	Geology Classes	Geo_fv geo classes		→	Geo_fvgrids\geo_clas		
	Faults	Geo_fv faults					
	Dip & Strike of Beds, Joints and Faults	Geo_fvdips and strikes					
	Detritus	Geo_fvdetritus		→	Geo_fvgrids\detri		
	Land Slides	Geo_fvlandslide classes		→	Geo_fvgrids\ lands_abc		
	Existing Slope Failure Location	Geo_fvslope failure		→	Geo_fvgrids\ slo_fail		
	Banks	Geo_fv banks		→	Geo_fvgrids\ banks		
	Anticline / Syncline	Geo_fv anti syncline					
	Landslide Direction	Geo_fv landslide direction					
Land Slide (USGS)	Geo_fv usgs_landslides		→	Geo_fvgrids\ usgs_lands			
Slope Failure Analysis	Landslide Affected Areas	Geo_fvdangerous_area			Geo_fvgrids\ lands_dan		
	Slope Failure Dangerous Areas	Geo_fvslope_failure_danger (Rank 1 & 2)			Geo_fvgrids\ slo_fail (Rank 1 & 2)		
	Slope Failure Affected Areas	Geo_fvslope_failure_danger (Rank 3)			Geo_fvgrids\ slo_fail (Rank 3)		
Maikoku	Contours from Maikoku Analysis	20m cells	25 m Contour Interval	Geo_fvmaikoku\contours_maikoku_20m	Maikoku	Grid size 20 m	Geo_fvmaikoku\dtm_20m
		50m cells	25 m Contour Interval	Geo_fvmaikoku\contours_maikoku_50m		Grid size 50 m	Geo_fvmaikoku\dtm_50m
	100m cells	25 m Contour Interval	Geo_fvmaikoku\contours_maikoku_100m		Grid size 100 m	Geo_fvmaikoku\dtm_100m	
	200m cells	25 m Contour Interval	Geo_fvmaikoku\contours_maikoku_200m		Grid size 200 m	Geo_fvmaikoku\dtm_200m	
	500m cells	25 m Contour Interval	Geo_fvmaikoku\contours_maikoku_500m		Grid size 500 m	Geo_fvmaikoku\dtm_500m	

3. Flood Modeling

Flood Prevention Area

Major	Vector			GRID (10*10m Cell)		
	Items	Shape File Name		Polygon Shape Grid	Water Depth Grid	
Flood	With Master Plan	15 Years	Flood_modeling\Cases\15 years with master plan	→	Flood_modeling\Cases\grids\15_mp	Flood_modeling\Cases\wdepth\wd_15mp
		50 Years	Flood_modeling\Cases\50 years with master plan	→	Flood_modeling\Cases\grids\50_mp	Flood_modeling\Cases\wdepth\wd_50mp
		Mitch	Flood_modeling\Cases\ Mitch with master plan	→	Flood_modeling\Cases\grids\ Mitch _mp	Flood_modeling\Cases\wdepth\wd_mitchm p
	With Project Priorities	10 Years	Flood_modeling\Cases\10 years with priority projects	→	Flood_modeling\Cases\grids\10_pp	Flood_modeling\Cases\wdepth\wd_10pp
		15 Years	Flood_modeling\Cases\15 years with priority projects	→	Flood_modeling\Cases\grids\15_pp	Flood_modeling\Cases\wdepth\wd_15pp
		50 Years	Flood_modeling\Cases\50 years with priority projects	→	Flood_modeling\Cases\grids\50_pp	Flood_modeling\Cases\wdepth\wd_50pp
		Mitch	Flood_modeling\Cases\ Mitch with priority projects	→	Flood_modeling\Cases\grids\ Mitch _pp	Flood_modeling\Cases\wdepth\wd_mitchp p
	Without Project	5 Years	Flood_modeling\Cases\5 years without project	→	Flood_modeling\Cases\grids\5_out	Flood_modeling\Cases\wdepth\wd_5out
		10 Years	Flood_modeling\Cases\10 years without project	→	Flood_modeling\Cases\grids\10_ou t	Flood_modeling\Cases\wdepth\wd_10out
		15 Years	Flood_modeling\Cases\15 years without project	→	Flood_modeling\Cases\grids\15_ou t	Flood_modeling\Cases\wdepth\wd_15out
		25 Years	Flood_modeling\Cases\25 years without project	→	Flood_modeling\Cases\grids\25_ou t	Flood_modeling\Cases\wdepth\wd_25out
		50 Years	Flood_modeling\Cases\50 years without project	→	Flood_modeling\Cases\grids\50_ou t	Flood_modeling\Cases\wdepth\wd_50out
		Mitch	Flood_modeling\Cases\ Mitch without project	→	Flood_modeling\Cases\grids\ Mitch _out	Flood_modeling\Cases\wdepth\wd_mitcho ut
	Protection Facility for Flood	Final_data\shapes\proposed_rivdment_alignme nt			-	-

4. Watershed Management [Only for the Study Area 1:50,000]

	Vector			GRID (100*100m Cell)	
	Items	Shape File Name		Items	Grid File Name
Building of Potential Erosion Map for the Study Area	R Value (Meteorological Stations)	Wshed\shapes\ r_value_points	→	Interpolation	Wshed\grids\ r_value
	K Value (Meteorological Stations)	Wshed\shapes\ k_value_points	→	Interpolation	Wshed\grids\ k_value
	LS Value (Length & Angle of Slope)	Only Grid			Wshed\grids\ ls_value
	C Value (According to Land Use)	Only Grid			Wshed\grids\ c_value
	Sub & Micro Basin Boundaries	Wshed\shapes\ micro_basin_50k	→		Wshed\grids\ micro_basin
	Drainage System	Wshed\shapes\ rivers_1 & rivers_2			
	Potential Erosion	Wshed\shapes\ potential_erosion	→		Wshed\grids\ ero_ranges
	Elevation (Contour heights every 100m)	Wshed\shapes\ contours_100m	→	Digital Terrain Elevation Model	Wshed\grids\ dtm
	Slope	Only Grid			Wshed\grids\ slope
	Potential Erosion by Micro Basin	Only Grid			Wshed\grids\ micro_ero_ran
Recalculation for Possible Correction	R Value (Meteorological Stations)		→	Interpolation	Wshed\recalc\ r_val_1
	K Value (Meteorological Stations)		→	Interpolation	Wshed\ recalc\ k_val_1
	LS Value (Length & Angle of Slope)	Only Grid			Wshed\ recalc\ ls_val_1
	C Value (According to Land Use)	Only Grid			Wshed\ recalc\ c_val_1
	Potential Erosion				Wshed\ recalc\ eros_val_ra
	Potential Erosion by Micro Basin	Only Grid			Wshed\ recalc\ er_sap_ton
	Land use by Micro Basin	Only Grid			Wshed\ recalc\ lusebyshed
Land Use Legend Description and Statistics recalculated Excel File	Wshed\ recalc\ Soil losses by microbasin.xls				

5. Geodesy [Ground Field Survey 1:500]

	Vector		GRID (100*100m Cell)	
	Items	Shape File Name	Items	Grid File Name
	Lidar Elevation Model (Raw)	Only Grid		Final_data\grids\lidar_dem
	Lidar Elevation Model (Adjusted)	Only Grid		Final_data\grids\lidar_mov
Lidar and field Control Points for Contour Derivation	Bambu Zone	Geodesy\Final\Bambu_points_th+lidar		
	Reparto Zone	Geodesy\Final\Reparto_points_th+lidar		
	Choluteca Zone	Geodesy\Final\Choluteca_points_th+lidar		
Ground Survey & Mapping Final Dataset	CAD Drawing Files	Geodesy\Final\Ground Survey and Mapping\ CAD files for each study zone		

6. Land Use

	Vector		GRID (10*10m Cell)	
	Items	Shape File Name	Items	Grid File Name
Existing Land Use	Land Use Plan (PAST:1986) (Wide:20000 square km) Study Area	Land_use_tanaka\studies\land_use_study86		Land_use_tanaka\studies\luse84
	Updated Land Use 2001 Study Area	Only Grid		Land_use_tanaka\studies\luse01
	Land Use Residential Planning Target Area		Land Use Residential Planning Target Area	Land_use_tanaka\colonia\luse_pre2
	Categories used in land use residential planning	Only Grid Data Sets Format	Categories used in land use residential planning:	Land_use_tanaka\colonia\Comm_cbd, pub_fac, airp_milit, water, parks, sports, cemetery, industrial, Public facilities, Sports Fields, settle, forest, roads, river_re Grid data sets used in the preparation of land use for target area.
	Colonia Boundaries (Residential classes)	Land_use_tanaka\colonia\colonia_rev_15 nov	Colonia Boundaries (Residential classes)	Land_use_tanaka\colonia\colol
	Built up Areas	Land_use_tanaka\colonia\builtup_rev_15 nov	Built up Areas	Land_use_tanaka\colonia\built_up
	Colonia + Built up areas		Colonia + Built up areas	Land_use_tanaka\colonia\colo_built
	Historical District	Final_data\shapes\historic_district		
	River Reserve Areas (Buffering)	Final_data\shapes\river_reserve_area		
	Total Drainage Basin Systems	Land_use_tanaka\studies\micro_basin_50k		Land_use_tanaka\studies\micro_bas
Future Land Use 2015	Land Use Plan Study Area			Land_use_tanaka\studies\luse20
	Land Use Residential Planning Target Area			Land_use_tanaka\colonia\future\future_luse4
	Future Housing Development	Land_use_tanaka\colonia\future\urbanizaciones nuevas		
Regulation Zoning	Flood Control Regulation Zoning Mitch with Master Plan and Priority Projects			Land_use_tanaka\Regulation_Zoning\Flood\Grid data sets Mitch_mp, Mitch_pp
	Landslide & Slope Failure Regulation Zoning			Land_use_tanaka\Regulation_Zoning\Landslides_Slope_Failure\Grid data sets Zone_1, Zone_2

7. Other Data (Images, Excel, etc)

	Items	File Name		
Image	2001 Orthophoto images (0.4 m pixel) (Original Data)	Orthophotos\Tiff Files Data Sets by each orthophoto		
Image	2001 Orthophoto images (1.0 m pixel) (resampling)	Geo Images\Mosaico. img Img Files Data Sets by each orthophoto		
Image	Study Area Topo Maps (Cartographic Maps from IGN)	Geo Images\hoja_carto_1628 Geo Images\hoja_carto_1636		
Image	Aerial Photographs, Tegucigalpa Area Georeferenced	Aerial_photography\photo_1946. img Aerial_photography\photo_1954. img		
Image	Aerial Photographs, Tegucigalpa Area (Open Skies 1999 USGS) Not Georeferenced	Aerial_photography\flight_line1 Aerial_photography\flight_line4		
DGN, DWG	Aerocarta Digital Mapping 1:5000, 1:10,000 scales	Digital_Mapping\June_8_Edition\10000 Digital_Mapping\June_8_Edition\5000\DGN Digital_Mapping\June_8_Edition\5000\DWG		
DWG	Drainage and Water Supply from SANNA	Final_data\shapes\drain. dwg		
	Mitch Flood Survey (TH)	Final_data\shapes\th_mitch_flood_survey		

GIS DIGITAL DATABASE STRUCTURE EXPLANATION

Foreword:

This GIS Database Explanation refers to the principal information obtained during the execution of GIS Activities in the “Study on Flood Control and Landslide Prevention in the Tegucigalpa Metropolitan Area of the Republic of Honduras”. The presentation order complies with the GIS Data List, available as part of this study, to follow an established configuration by major aspects executed during the study, specifically in GIS.

Major: Digital Mapping Cartography

Digital Coverage: Dm_arrangmt_1 → Feature: Lines

Layer # or Identification	Description	Remarks
14	Culvert	
15	Water Tank	
16	Tower	
17	Water Level Gauge Station	
18	Power Transmission Line	
19	Pipe Line of Water Supply and Drain	
19_new	Drainage / Water Supply SANAA	Digitized from SANNA info.

Digital Coverage: Dm_arrangmt_2 → Feature: Lines

Layer # or Identification	Description	Remarks
4	Divided Highway and Main Roads	
5	Main Roads and Streets	
6	Secondary Roads and Streets	
7	Tracks and Trails	
8	Footpath	
9	Bridge	

Digital Coverage: Dm_arrangmt_3 → Feature: Lines

Layer # or Identification	Description	Remarks
25	River	
26	Stream	
27	Irrigation Canal	
28	Lake / Pond	
30	Weir or Dam	

Digital Coverage: Dm_arrangmt_4 → Feature: Lines

Layer # or Identification	Description	Remarks
20_new	Airport Runway	
21	Fence, Hedge	
22	Enclosed Wall	

Digital Coverage: Dm_arrangmt_5 → Feature: Polygons

Layer # or Identification	Description	Remarks
24i	Cemetery	Converted from lines
24ii	Court Football / Court Basketball	Idem
24iii	Golf Club	Idem
24iv	National Parks	Idem
24v	National Stadium	Idem
24vi	Parks	Idem

Digital Coverage: Dm_arrangmt_6 → Feature: Lines

Layer # or Identification	Description	Remarks
35	Index Contour	Elevation contained in database
36	Intermediate Contour	Elevation contained in database
37	Supplemental Contour	Elevation contained in database
38	Spot Height	Elevation contained in database

Digital Coverage: Dm_arrangmt_7→ Feature: Lines

Layer # or Identification	Description	Remarks
39	Cutting	
40	Dike	
41	Crumbling earth and erosion gully	
43	Revetment / Retaining Wall	
44	Rock Cliff and Bare Rock	
46	Triangulation, Benchmark, Control Point	

Digital Coverage: Dm_arrangmt_8→ Feature: Polygons

Layer # or Identification	Description	Remarks
101	Army Facilities	
102	Banks	
103	Bridges	
104	Cemetery	
105	Church & Chapel	
106	Commercial Areas	
107	Community Facilities	
108	Fire Station	
109	Gas Station	
110	Government Office	
111	Hospital & Red Cross	
112	Hotels	
113	Industrial Areas	
114	International Cooperation	
115	National Stadium	
116	Old Buildings	
117	Other Important Office	
118	Parks	
119	Police Authorities	
120	Protocol Facilities	
121	Schooling Centers	
122	Sports Courts	
123	TV Companies	
124	University	
125	Water Supply Facilities	
126	Welfare Institutions	

Note: Dm_arrangmt_8 is referred to the important building database, mainly on institutions. For this coverage there is a descriptive field named "concepto" which contains the specific name for each building or institution or enterprise.

Major: Geology

Digital Coverage: Geo classes → Feature: Polygons

Layer # or Identification	Description	Remarks
1	Krc	
2	Kvn	
3	Odt	
4	Qal	
5	Qan1	
6	Qan2	
7	Qb	
8	Qe1	
9	Qe2a	
10	Qe2b	
11	Qe3	
12	Reservoir	
13	River Bank	
14	TM	
15	Tcg	
16	Tep	
17	Ti	
18	Tpm1	
19	Tpm2	
20	Tpm3	
21	Tpml	

Digital Coverage: Faults → Feature: Lines

Layer # or Identification	Description	Remarks
1	Faults Lines	

Digital Coverage: Dips and Strikes → Feature: Lines

Layer # or Identification	Description	Remarks
1	Dips and Strike of Beds	Contains numerical value of direction and strike
2	Dips and Strike of Faults	Idem
3	Dips and Strike of Joints	Idem

Digital Coverage: Detritus → Feature: Polygons

Layer # or Identification	Description	Remarks
1	Detritus Layer	

Digital Coverage: Landslides Classes → Feature: Polygons

Layer # or Identification	Description	Remarks
100	Landslides type A	
200	Landslides type B	
300	Landslides type C	

Digital Coverage: Slope Failure (Existing) → Feature: Polygons

Layer # or Identification	Description	Remarks
2	Deposition Extent	
10	Occurrence Extent	

Digital Coverage: Banks → Feature: Polygons

Layer # or Identification	Description	Remarks
1	Geological Banks	

Digital Coverage: Anti syncline → Feature: Lines

Layer # or Identification	Description	Remarks
1	Anticline	
2	Syncline	
11	Arrow / Anticline	
22	Arrow / Syncline	

Digital Coverage: USGS_landslides → Feature: Polygons

Layer # or Identification	Description	Remarks
100	USGS Landslides (Identified)	

Digital Coverage: Dangerous_area → Feature: Polygons

Layer # or Identification	Description	Remarks
300	Dangerous: Landslides A	
400	Dangerous: Landslides B	

Digital Coverage: Slope_failure_danger → Feature: Polygons

Layer # or Identification	Description	Remarks
1	Rank A	
2	Rank B	
3	Affected Areas	

Major: Flood Prevention

Digital Coverage: "Several Flood Scenarios" → Feature: Polygons

Note: For this particular item, 13 cases were screen digitized only the flooding boundary without specific subdivision in its database. Therefore, no need for explanation. Each one of them has a unique, descriptive name, making it easier to understand what it is about.

Digital Coverage: "Several Flood Water Depth Cases" → Feature: Grid

Note: For each of the flood scenarios mentioned above, the water depth was calculated using a Grid Dataset File Format Type. The Database numerical value explanation is as follows:

Layer # or Identification	Description	Remarks
1	Water Depth Interval: 0 – 30 cm	
2	Water Depth Interval: 30 – 50 cm	
3	Water Depth Interval: 50 – 100 cm	
4	Water Depth Interval: 100 – 200 cm	
5	Water Depth Interval: 200 – 300 cm	
6	Water Depth Interval: > 300 cm	

Major: Watershed Management (Potential Erosion)

Digital Coverage: r_value_points → Feature: Points

Layer # or Identification	Description	Remarks
Several Values	Rainfall & Runoff Values for Meteorological Station	<ul style="list-style-type: none"> - Stations Distributed throughout the Basin - A grid was interpolated containing a continuous surface of values from these points

Digital Coverage: k_value_points → Feature: Points

Layer # or Identification	Description	Remarks
Several Values	Soil Erodability Values from Sample Places	<ul style="list-style-type: none"> - Samples Distributed throughout the Basin - A grid was interpolated containing a continuous surface of values from these points

Digital Coverage: ls_value → Feature: Grid

Layer # or Identification	Description	Remarks
Several Values	Length and Angle of Slope	Grid Continuous Surface Derived from DEM and Several Calculations

Digital Coverage: c_value → Feature: Grid

Layer # or Identification	Description	Remarks
Several Values	C value	Grid Continuous Surface Derived from land use according to each land use designation

Digital Coverage: rivers_1 → Feature: Lines

Layer # or Identification	Description	Remarks
Several Values	Boundaries of major rivers in the Basin	

Digital Coverage: rivers_2 → Feature: Lines

Layer # or Identification	Description	Remarks
2	Rivers	
3	Permanent Streams	
6	Intermitent Streams	

Digital Coverage: Slope → Feature: Grid

Layer # or Identification	Description	Remarks
Several Values	Angle of Slope in Degrees	Grid Continuous Surface Derived from DEM

Digital Coverage: micro_basin_50k → Feature: Polygons

Layer # or Identification	Description	Remarks
1	Choloteca	Name of Identified and Delimited Micro Basin
2	Sapo	Idem
3	Guacerique Abajo	Idem
4	Guacerique Arriba	Idem
5	Qda. Grande	Idem
6	Quiebramontes	Idem
7	Guaralalao	Idem
8	Quiscamote	Idem
9	Mateo	Idem
10	Horcones	Idem
11	Dulce	Idem
12	Qda. Grande	Idem
13	Grande	Idem
14	San Jose	Idem
15	Ojojona	Idem
16	Laguna El Pescado	Idem
17	San Jose	Idem
18	Aguila	Idem
19	Ingles	Idem
20	Sabacuante	Idem
21	Tatumbla	Idem
22	Qda. Salada	Idem
23	Chiquito	Idem
24	Trojas	Idem
25	Mololoa	Idem
26	Burras	Idem
27	Lomas	Idem

Digital Coverage: potential_erosion → Feature: Polygons

Layer # or Identification	Description	Remarks
1	Annual Soil Loss Interval: 0 – 10	Ton/ha/year
2	Annual Soil Loss Interval: >10 – 50	Idem
3	Annual Soil Loss Interval: >50 – 200	Idem
4	Annual Soil Loss Interval: >200	Idem

Digital Coverage: contours_100m → Feature: Lines

Layer # or Identification	Description	Remarks
Several Values	Elevation value for contours. Interval of 100 m	Interval of 100 m

Major: Geodesy

Digital Coverage: lidar_dem → Feature: Grid

Layer # or Identification	Description	Remarks
Several Values	Elevation Values	Grid Continuous Elevation Surface obtained from Laser Technology. From USGS WGS 84 Datum

Digital Coverage: lidar_mov → Feature: Grid

Layer # or Identification	Description	Remarks
Several Values	Elevation Values	Grid Continuous Elevation Surface obtained from Laser Technology. From USGS NAD 27 Datum

Major: Land Use

Digital Coverage: land_use_study86 → Feature: Polygons

Layer # or Identification	Description	Remarks
101	Urban area, high density pop., capital city	
110	Urban area, medium density pop., municipalities, main cities	
120	Urban area, low density pop., town, hamlets	
402	Citrics	
409	Basic cereals	
415	Basic grain and vegetable rotation	
425	Natural pasture	
424	Cultivated pasture	
427,428	Basic grain pasture rotation	
451	Pine Forest	
452	Wide leaf forest	
453	Mixed forest, pines predominant,	
454, 456	Mixed forest, wide leaf predominant	
457	Oak forest constituted by oak, though occasionally there may be pines	
458	Thicket, wide leaf trees forest made up of many species with may be pines	
460	Erosioned and vacant lands, landslides, etc.	
10000	Water surfaces, reservoirs, rivers	

Digital Coverage: luse_01 → Feature: Grid

Layer # or Identification	Description	Remarks
1	Agriculture	
3	Barren Land	
4	Bush Land	
5	Forest & Shrubs	
6	High Density Urbanized Area	
7	Pasture & Grass Land	
8	Settlement Area	
9	Water	

Digital Coverage: luse_pre2 → Feature: Grid

Layer # or Identification	Description	Remarks
1	Commercial	
2	Protocol & Business Area	
100	Public Facility	
123	Airport	
124	Military Facility	
200	Park & Green Area	
250	Cemetery	
300	Sports Field	
400	Reservoir	
500	Industrial Area	
600	Forest & Shrubs	
1000	R-1: Residential 250 pers. / ha	
2000	R-2: Residential 400 pers. / ha	
3000	R-3: Residential 500 pers. / ha	
4000	R-4: Residential 800 pers. / ha	
5000	R-5: Residential >800 pers. / ha	
29600	Roads & Streets	
29700	River Reserve Area	
60000	Vacant Space	

Digital Coverage: Colonia_rev_15nov → Feature: Polygons

Note: The colonia boundaries were digitized from latest information found at INE (National Statistics Institute) from the Pre Census 2000.

The Explanation of each field present in its database is as follows:

Field	Description & Calculation Criteria
Code	Numerical Value for each colonia
Neigh	Name of Colonia
I_Class	Income Class
House_f	Household Number per Colonia
Factor_f	Number of People per Household
Pop_f	Population by Colonia (House_f * Factor_f)
Area_tot	Total Area by Colonia in Hectares
Area_built	Built up area by colonia in Hectares
Gross	Gross Area by Colonia in Hectares (Area_built * 1.15)
Cov	Built up area coverage by colonia in %
Density	Population Density by Colonia, Number of people by hectare
Res_class	Residential Class by Colonia, According to Population Density

Digital Coverage: built_up_rev_15nov → Feature: Polygons

Layer # or Identification	Description	Remarks
23	Built up areas	Derived from Digital Mapping and Orthophoto Recognition

Digital Coverage: Historic_distric → Feature: Polygons

Layer # or Identification	Description	Remarks
1	Tegucigalpa Historic Distric	
2	Comayaguela Historic Distric	

Digital Coverage: luse_20 → Feature: Grid

Layer # or Identification	Description	Remarks
1	Agriculture	
2	Airport	
3	Barren Land	
4	Bush Land	
5	Forest & Shrubs	
6	High Density Urbanized Area	
7	Pasture & Grass Land	
8	Settlement Area	
9	Water	

Digital Coverage: luse_pre2 → Feature: Grid

Layer # or Identification	Description	Remarks
1	Commercial	Existing, No Change
2	Protocol & Business	Existing, No Change
100	Public Facility	Existing, No Change
123	Airport	Existing, No Change
124	Military Facility	Existing, No Change
200	Park & Green Areas	Existing, No Change
250	Cemetery	Existing, No Change
300	Sports Field	Existing, No Change
400	Reservoir	Existing, No Change
500	Industrial Areas	Existing, No Change
600	Forest & Shrubs	Existing, No Change
1000	R-1: Residential 250 pers. / ha	Existing, No Change
2000	R-2: Residential 400 pers. / ha	Existing, No Change
3000	R-3: Residential 500 pers. / ha	Existing, No Change
4000	R-4: Residential 800 pers. / ha	Existing, No Change
5000	R-5: Residential > 800 pers. / ha	Existing, No Change
10001	Disaster Prevention Green Area	Planned, Future
10002	R-1: Residential 250 pers. / ha	Planned, Future
10003	Commercial	Planned, Future
10004	Public Facility	Planned, Future
10005	R-2: Residential 400 pers. / ha	Planned, Future
10006	Industrial Areas	Planned, Future
10007	R-1: Residential 250 pers. / ha	Planned, Future
10008	Park & Green Areas	Planned, Future
29600	Roads & Streets	Existing, No Change
29700	River Reserve Area	Existing, No Change
60000	Vacant Space	Existing, No Change

Digital Coverage: Mitch_mp "Flood Regulation Zoning" → Feature: Grid

Layer # or Identification	Description	Remarks
1	Less than 1 m Water Depth	Derived from Water Depth Grid, Mitch with Master Plan Scenario
2	More than 1 m Water Depth	Derived from Water Depth Grid, Mitch with Master Plan Scenario

Digital Coverage: Mitch_pp “Flood Regulation Zoning” → Feature: Grid

Layer # or Identification	Description	Remarks
1	Less than 1 m Water Depth Zone 1	Derived from Water Depth Grid, Mitch with Priority Projects Scenario
2	More than 1 m Water Depth Zone 2	Derived from Water Depth Grid, Mitch with Priority Projects Scenario

Digital Coverage: Reg_zoning “Landslides & Slope Failure Regulation Zoning” → Feature: Grid

Layer # or Identification	Description	Remarks
1	Zone 1	Derived from: <ul style="list-style-type: none"> - Slope Failure Rank A - Landslides Type A - Dangerous Areas of Landslides Type A excluding Berrinche, Reparto and Bambu Zones
2	Zone 2	Derived from: <ul style="list-style-type: none"> - Slope Failure Rank B

Major: Other Data

Note: Types of Information that may be referred in this aspect are the following:

- Pancromatic Orthophoto TIFF images. Pixel size: 0.4 m
- Pancromatic Orthophoto IMG images. Pixel size: 1 m. Resampled from the TIFF files
- Color Study Area Topographic Map IMG images. Pixel size: 1 m. Resampled from USGS SID files
- Monocromatic Aerial Photography of Tegucigalpa IMG images. Pixel size: 1 m.
- Pancromatic Aerial Photography of Tegucigalpa TIFF Images. Pixel size: 5 m.

These datasets are image data format type; thus, do not have a dBASE database to explain.

Also:

- Microstation DGN Digital Mapping files. 1:5,000 & 1:10,000 Scales
- AutoCAD DWG Digital Mapping files. 1:5,000 & 1:10,000 Scales

These datasets are not GIS data formats, but Drawing & Drafting types, which may be exported to a GIS format, because they have coordinate system.

Notice: The definition for each of the digital coverage mentioned previously has to be obtained from the GIS Data List for this study. Also, a better understanding may be accomplished by reading the GIS operational manuals (Basic & Complex Functions).