

Geodetic Engineers of the Philippines  
**GEODETIC ENGINEERS OF THE PHILIPPINES**  
REGIONAL DIVISION 2

**42<sup>nd</sup> ANNUAL REGIONAL CONVENTION**

26 February 2016, **Club Royale Resort and Hotel, Malolos City**

Theme: *“Ensuring Competitiveness of Filipino Geodetic Engineers in  
the Global Practice through Effective Continuing Professional  
Development”*

GE Basics on Geotagging and  
Databasing

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Geodetic Engineer - GIS/IT Specialist  
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0919-2456667

# GEP Membership

- What do I get from being a GEP Member?
  - Acquire / Awareness – Knowledge & Skills
    - Technical
    - Management
    - Social / Emotional
  - Network / Camaraderie
  - “Value” Formation / Enhancement
  - Compliance to Government Regulations / Laws



# CPD Bill SB 2581 Passes Third and Final Reading in the Senate

- **Senate: Professionals have to study, train before licenses are renewed**  
<http://guroako.net/index.php/2015/08/04/>  
**(Accessed 12 August 2015)**  
Posted on [August 4, 2015](#) by [guroako](#) in [Featured](#), [News](#), [Politics](#), [Regional News](#)
- MANILA, Philippines – The Senate approved a bill requiring professionals to undergo further formal and informal learning programs before they can renew their licenses.
- Senate Bill 2581 or Continuing Professional Development (CPD) Act of 2015 was approved by the legislative chamber on third and final reading.

# CPD Bill SB 2581 Passes Third and Final Reading in the Senate

- “CPD is the post-licensure practice of inculcating skills, knowledge and ethical values upon all professionals through various methods such as formal learning, informal learning, self-directed learning, on-line learning activities and accredited professional work experience,” said Senator Antonio Trillanes IV in a sponsorship speech. Trillanes chairs the committee on civil service and government reorganization.
- The bill also requires government agencies and private firms to include formal and informal learning requirements in their human resource development plan. It is a response “to the standards in the national, regional and international labor markets” given the envisioned ASEAN economic community.
- **CPD councils for monitoring of the post-licensure efforts to enhance the competence of professionals will be supervised by Professional Regulatory Boards under the proposed law.**

# PRC Resolution 774 of 2013



Republic of the Philippines  
Professional Regulation Commission  
Manila



RESOLUTION No. 2013-774  
Series of 2013

**REVISED GUIDELINES ON THE CONTINUING PROFESSIONAL DEVELOPMENT  
(CPD) PROGRAM FOR ALL REGISTERED AND LICENSED PROFESSIONALS**

# CPU Points Matrix

Program / Activity	Program / Activity	Program / Activity	Credit	Units	Supporting Document
Seminars / Workshops	Participant			1CU per Hr	Certificate of Attendance with Number of Hours, Seminar Program and List of Participants
Seminars / Workshops	Resource Speaker			5CU per Hr	Photocopy of Certificate, Copy of Papers and Program Invitations
Seminars / Workshops	Panelist / Reactor			3CU per Hr	Certificate from Sponsoring Organization copy of Program
Seminars / Workshops	Facilitator / Moderator			2CU per Hr	Certificate from Sponsoring Organization copy of Program
Post Graduate / Specialty Training	Master's Degree			CU per Academic 1Unit	University Certification, Diploma and Transcript of Records
Post Graduate / Specialty Training	Master's Degree			CU Addtl Upon Completion of 20Degree	Diploma and Transcript of Records
Post Graduate / Specialty Training	Doctoral Degree			CU per Academic 2Unit	University Certification, Diploma and Transcript of Records
Post Graduate / Specialty Training	Doctoral Degree			CU Addtl Upon Completion of 30Degree	Diploma and Transcript of Records
Post Graduate / Specialty Training	Residency / Extership / Specialty / Sub-Specialty Program			10CU per Year	Hospital Certification, Certificate of Completion
Post Graduate / Specialty Training	Fellowship			15Cu per Year	Certification from the Granting Institution and/or Certificate of Fellowship

Self-Directed and/or Lifelong Learning				
Self-Directed and/or Lifelong Learning	Training Module		10CU per Complete Set of Module	Copy of Module and Evaluation
Self-Directed and/or Lifelong Learning	Technical Paper / Professional Journal Article		5CU / Professional / Technical Article	Copy of Published Article and Evaluation
Self-Directed and/or Lifelong Learning	Research / Innovative Programs / Creative Projects		10CU	Published Technical Report / Paper
Self-Directed and/or Lifelong Learning	Book / Monograph	Single Author	20CU per 1-3 Pp	Published Book with Proof of Copyright
Self-Directed and/or Lifelong Learning	Book / Monograph	Single Author	30CU per 4-6 Pp	Published Book with Proof of Copyright
Self-Directed and/or Lifelong Learning	Book / Monograph	Single Author	40CU per 7+ Pp	Published Book with Proof of Copyright
Self-Directed and/or Lifelong Learning	Book / Monograph	2 Authors	10CU per 1-3 Pp	Published Book with Proof of Copyright
Self-Directed and/or Lifelong Learning	Book / Monograph	2 Authors	20CU per 4-6 Pp	Published Book with Proof of Copyright
Self-Directed and/or Lifelong Learning	Book / Monograph	2 Authors	30CU per 7+ Pp	Published Book with Proof of Copyright
Self-Directed and/or Lifelong Learning	Book / Monograph	3 or More Authors	5CU per 1-3 Pp	Published Book with Proof of Copyright
Self-Directed and/or Lifelong Learning	Book / Monograph	3 or More Authors	10CU per 4-6 Pp	Published Book with Proof of Copyright
Self-Directed and/or Lifelong Learning	Book / Monograph	3 or More Authors	20CU per 7+ Pp	Published Book with Proof of Copyright
Self-Directed and/or Lifelong Learning	Book / Monograph	Editor	0.5CU of Authors	Published Book with Proof of Authorship
Self-Directed and/or Lifelong Learning	Article	Single Author	4CU per 1-3 Pp	Proof of Publication of Article
Self-Directed and/or Lifelong Learning	Article	Single Author	6CU per 4-6 Pp	Proof of Publication of Article
Self-Directed and/or Lifelong Learning	Article	Single Author	8CU per 7+ Pp	Proof of Publication of Article
Self-Directed and/or Lifelong Learning	Article	2 Authors	3CU per 1-3 Pp	Proof of Publication of Article
Self-Directed and/or Lifelong Learning	Article	2 Authors	4CU per 4-6 Pp	Proof of Publication of Article
Self-Directed and/or Lifelong Learning	Article	2 Authors	6CU per 7+ Pp	Proof of Publication of Article
Self-Directed and/or Lifelong Learning	Article	3 or More Authors	2CU per 1-3 Pp	Proof of Publication of Article
Self-Directed and/or Lifelong Learning	Article	3 or More Authors	3CU per 4-6 Pp	Proof of Publication of Article
Self-Directed and/or Lifelong Learning	Article	3 or More Authors	4CU per 7+ Pp	Proof of Publication of Article

Professiona Journal Editor				5CU per issue	Copy of Published Journal
Peer Reviewer				2CU per Article	Copy of Published Article / Book
Inventions			Full	CU for Compliance Period	Certificate Copy of Patent Certificate
Short-Term Post Graduate / In-Service Training				CU per Hr (Max of 30 0.25CU/Training)	Certificate of Training & Training Description
Study Tours / Visits				CU per day (Max of 20 2CU/Tour)	Certificate from Sponsoring Organization
Professional Chair			Full	CU for Compliance Period	Certification of Grant or Appointment Paper
Such Other Activities to Recommended by the Council and Approved by the Commission	Officer			15CU per Year	Certification from the APO Board Secretary



# PRC-CPD (45 units) and the ASEAN Engineer Registry (150 units)

- Seminar / Workshops
- Post Graduate / Specialty Training
- Self-Directed and/or Lifelong Learning
- Professional Journal Editor
- Peer Reviewer
- Inventions
- Short-Term Post Graduate / In-Service Training
- Study Tours / Visits
- Professional Chair
- Such Other Activities to Recommended by the Council and Approved by the Commission

# CPD REQUIREMENTS FOR GE

<b>REGIONAL CONV</b>	<b>AREA ASSEMBLY</b>	<b>NATIONAL DIR./CONV.</b>	<b>REQD CPD UNITS PER 3 YRS</b>
30	10	5	45

CHAPTER

➔ HIGHLY TECHNICAL TRAININGS



# Geodetic Engineers' Pledge

- I shall do my best for the advancement of the knowledge and practice of Geodetic Engineering.
- Acknowledge my responsibilities and obligations that accompany my rights and privileges
- I shall participate actively in all endeavors .... enhance technical competence...
- I shall be abided by the rule of the ... in safeguarding... the interest of members..

# Training Topics

- *Geographic Information Systems (GIS)*
  - Introduction to GIS
  - Advance GIS / GIS for Managers
- *Global Position Systems (GPS)*
  - Introduction to GPS
  - Advance GPS
- *Remote Sensing (RS) – LIDAR / SAR / Multi Sensors*
  - Introduction to RS
  - Advance RS
- *Database Management Systems (DBMS)*
  - Introduction to DBMS
  - Advance DBMS
- *Content Management Systems (CMS)*
  - Introduction to CMS
  - Advance CMS
- *Unmanned Aerial Vehicle (UAV)*
  - Acquisition and Processing
  - Application Development
  - Parts, Repair and Maintenance

# What is Geotagging?

- Geotagging - is the process of adding geographical identification metadata to various media such as a geotagged photograph or video, websites, SMS messages, QR Codes[1] or RSS feeds and is a form of geospatial metadata. This data usually consists of latitude and longitude coordinates, though they can also include altitude, bearing, distance, accuracy data, and place names.


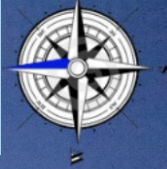
<https://en.wikipedia.org/wiki/Geotagging>





Department of Agriculture  
GPS Time: Aug 3, 2015, 11:34 AM  
Latitude: 15.072885  
Longitude: 120.662373  
Bearing: 0.0°

# Geotagging Photos




Department of Agriculture  
GPS Time: Aug 3, 2015, 11:34 AM  
Latitude: 15.072885  
Longitude: 120.662373  
Bearing: 0.0°

More Info

General **GPS** TIFF

Latitude 15° 4' 22.386" N  
Longitude 120° 39' 44.544" E



rac SAN FERNANDO Mexico

Legal

Show in Maps Remove Location Info

# Survey => Points, Lines and Polygons with Coordinates

- NAMRIA GCPs
- BLLMS
- MLIM
- BBIM
- Cadastral Maps

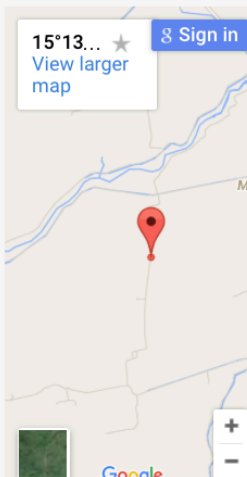





# Monumenting / Geotagging

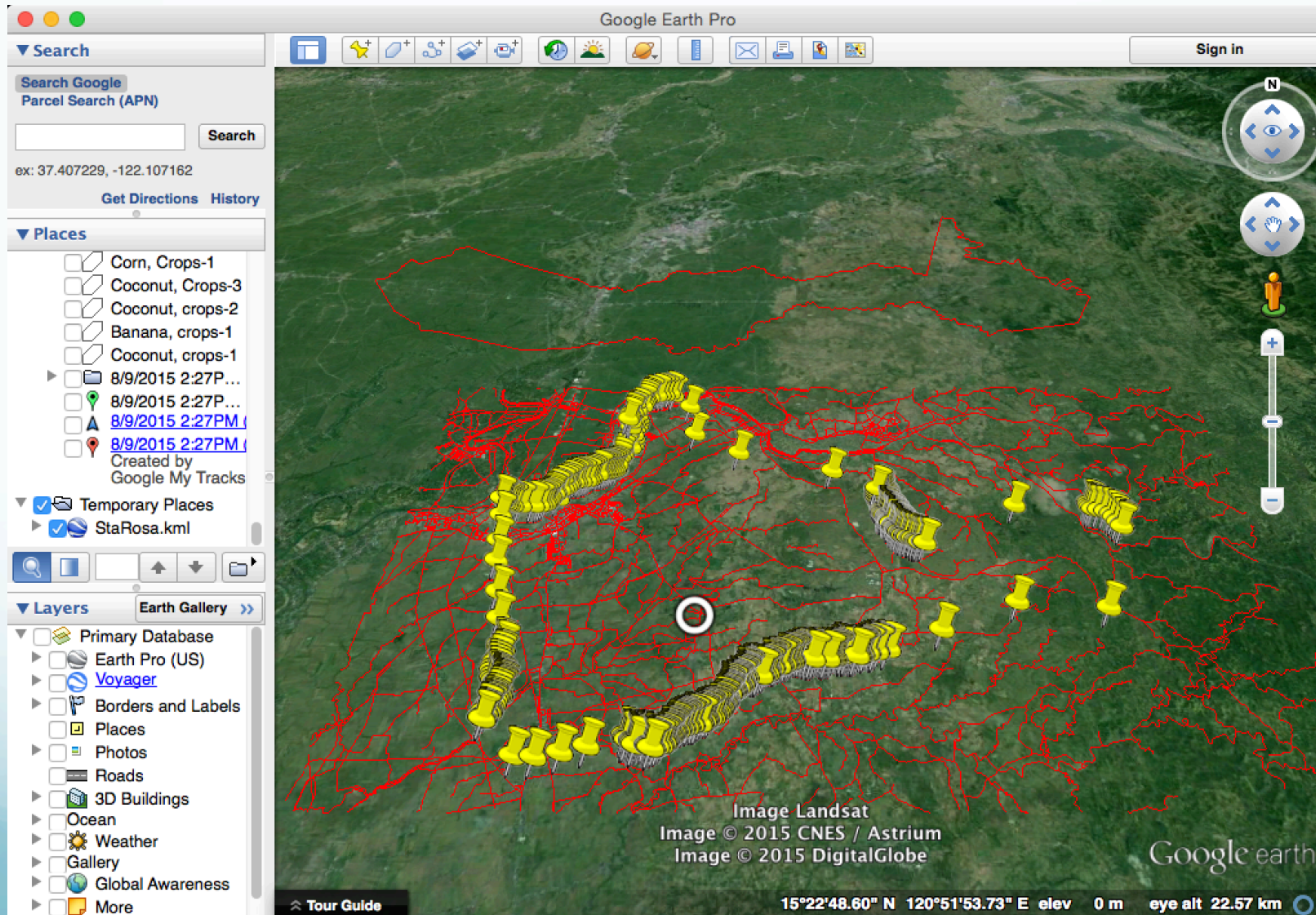




# Database

<p><b>CADASTRAL SURVEY - Category "B"</b></p> <p><b>DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES - REGION III</b></p>		<p><b>Designation:</b> <b>BLLM-100</b></p> <p><b>Page: 246</b></p>	<p><b>SURVEYED / DESCRIBED BY:</b> GeoIDEx Surveying and Mapping Systems</p> <p><b>DATE ESTABLISHED:</b> Sunday, 03 August 2014 05:49</p>
<p><b>THE POINT IS MEASURED AND PERMANENTLY MARKED IN 2014</b></p>		<p><b>PHOTO / SKETCH</b></p> <p><b>PICTURES:</b></p>	
<p><b>CADASTRAL SURVEY NO:</b> CAD-225</p>	<p><b>POLITICAL BOUNDARY SURVEY NO:</b> PB-03-000045</p>		
<p><b>GEOGRAPHIC COORDINATES (WGS 84)</b> Φ = , λ =</p>	<p><b>GEOGRAPHIC COORDINATES (PRS 92)</b> Φ = 15.22194556, λ = 120.93101400</p>		
<p><b>GRID COORDINATES (PTM) in Meter</b> N = 1706822.866, E = 492272.848</p>	<p><b>ELEVATION in Meter 0</b> Elipz Ht WGS84 = 56.145 Elipz Ht PRS92 = 0</p>	<p><b>CONTROL POINT</b> <b>Bureau of Lands Location Monument (BLLM)</b></p>	
<p><b>ISLAND:</b> Luzon</p>	<p><b>CITY / MUNICIPALITY:</b> Gapan City</p>	<p><b>CAVEAT:</b> This site and data herewith are for demonstration purposes only.</p>	
<p><b>PROVINCE:</b> Nueva Ecija</p>	<p><b>BARANGAY:</b></p>	<p>Updates and Official/Actual Data can be acquired through <a href="#">DENR R3 LMS Office</a> or call to inquire at (045) 455-3402.</p>	
<p><b>DESCRIPTION:</b> Mark is the head of a 3" copper nail embedded and centered on a 25X25cm (top) by 35X35cm(base) by 120cm(height) standard concrete square base frustum, set on the ground with protruding 20 cm on the surface with inscriptions..."GAPAN CITY NEJ BLLM NO.100 CAD 225 DENR III 2014".</p>	<p><b>ACCESS:</b> The monument is located along the barangay road beside a residential house and is approximately 60 meters away after the Marelo Elementary School.</p>	<p><a href="#">Monument Description Book (MDB) link</a></p>	
<p><b>SURVEYED / DESCRIBED BY:</b> GeoIDEx Surveying and Mapping Systems</p>	<p><b>DATE ESTABLISHED:</b> Sunday, 03 August 2014 05:49</p>		

# Cadastral Data overlay Google Map

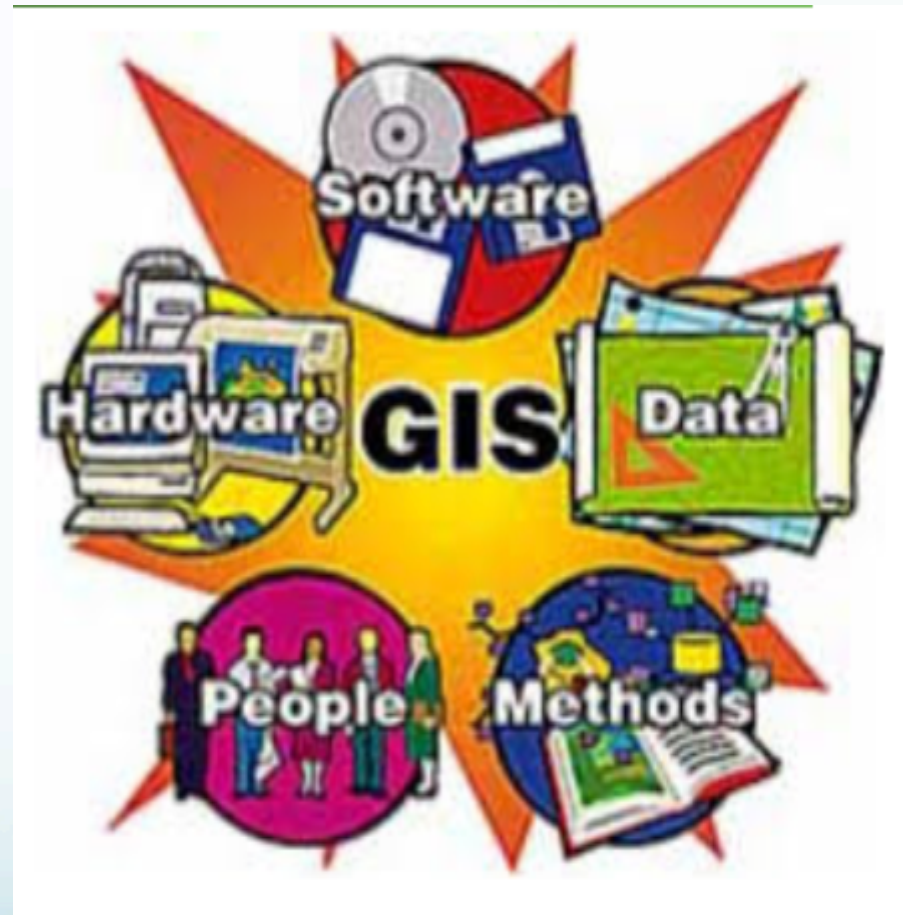






Geotagging → GIS

# GIS Components

- Software
- Data
- Methods / Processes
- People / Organization
- Hardware



# Is this it GIS?

Google   

[Web](#) [Images](#) [Maps](#) [News](#) [Videos](#) [More ▾](#) [Search tools](#)


About 142,000 results (0.41 seconds)

## Ocampo St, Manila, Metro Manila

Century Park Hotel, Address

[Feedback](#)

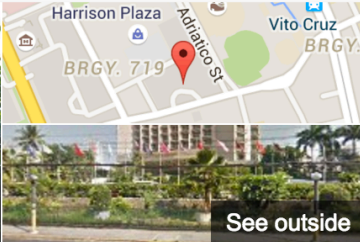

**Century Park Hotel - Home**  
[www.centurypark.com/](http://www.centurypark.com/) ▾  
The **Century Park Hotel Manila** is a Five Star business hotel in **Manila** where guests can experience the warmth of Filipino hospitality. This **Manila** hotel is ...

 Ocampo St, Manila, Metro Manila  
(02) 528 8888  
[Accommodation](#) - [Contact Us](#) - [Promo](#) - [Facilities](#)

**Century Park Hotel, Manila, Philippines - Booking.com**  
[www.booking.com](http://www.booking.com) ▾ [Philippines](#) ▾ [Luzon](#) ▾ [Manila Hotels](#) ▾ [Malate](#) ▾  
★★★★★ Rating: 7/10 - 302 reviews  
The 5-star **Century Park Hotel** is in **Manila**, a 5-minute drive from The Cultural Centre of the Philippines and the ... **Location** is relatively near the airport.

**Century Park Hotel - Manila - Facebook**  
<https://www.facebook.com/centurypark.manila/> ▾  
**Century Park Hotel - Manila, Manila, Philippines.** 16693 likes · 929 talking about this.  
Welcome to the OFFICIAL fan page of **Century Park Hotel - Manila**.

**Century Park Hotel - TripAdvisor**



[See photos](#) [See outside](#)

## Century Park Hotel


[Website](#) [Directions](#)


4.0 ★★★★★ 47 Google reviews  
4-star hotel

**Address:** Ocampo St, Manila, Metro Manila  
**Phone:** (02) 528 8888

**Ads** [Book a room](#) ⓘ

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 **Agoda.com** [Book from ₱4020](#)  
Verified Hotel Reviews · Over 725,000 Hotels


 **Expedia.com.ph** [Book from ₱3815](#)

[View more rates](#)



# Or this?

Century Park Hotel



**Century Park Hotel**  
4.0 ★★★★★ 47 reviews  
4-star hotel

Directions

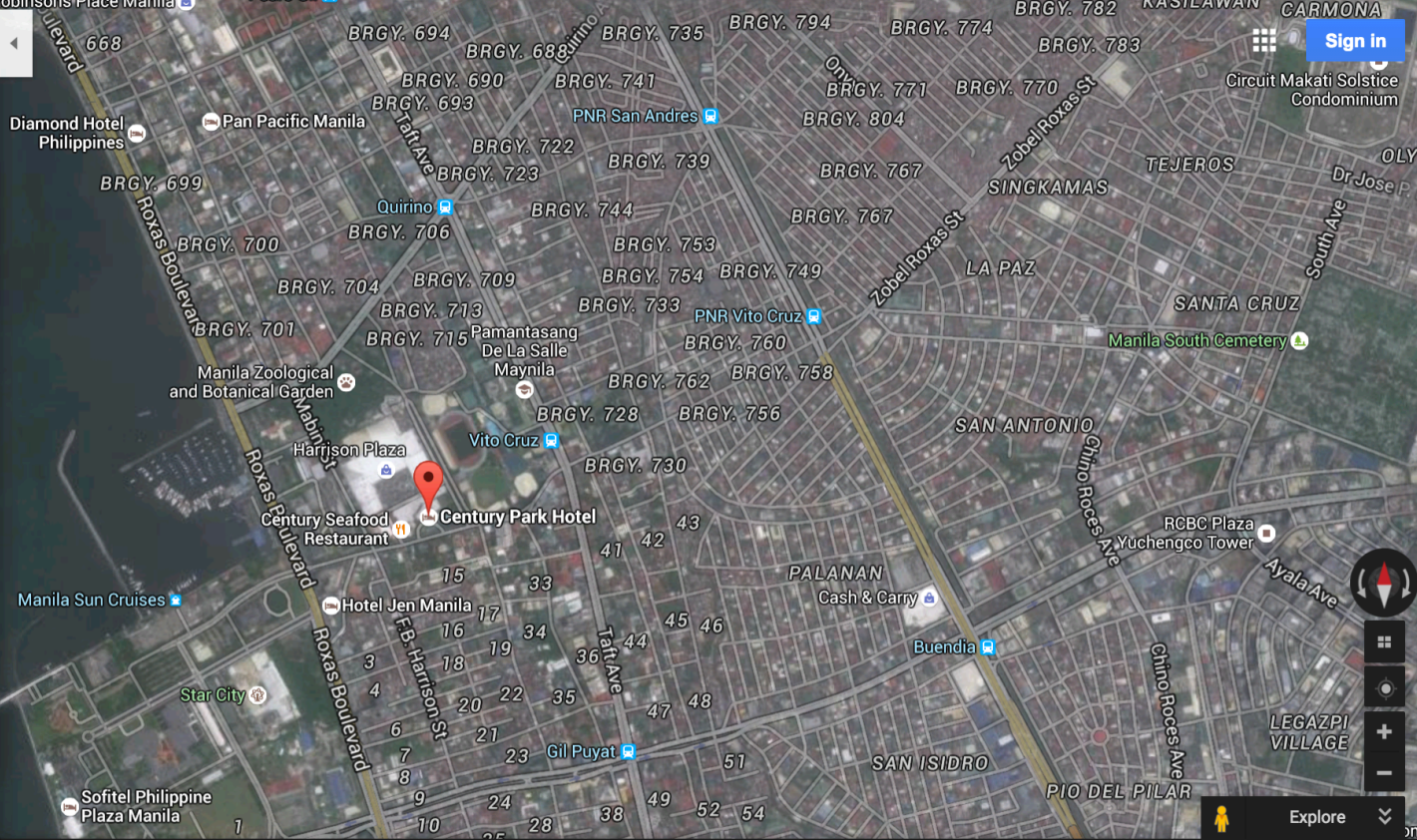
SAVE NEARBY SHARE

Ocampo St, Manila, Metro Manila  
centurypark.com  
(02) 528 8888  
Claim this business


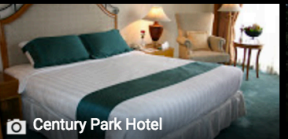
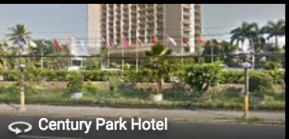

Book a room **Ad**

Sun, Nov 22 Mon, Nov 23

Agoda.com Book from ₱4,020



Map



Business listings provided by OpenRice Map data ©2015 Google Terms Privacy Send feedback Edit the map 500 m



# Or you prefer this?



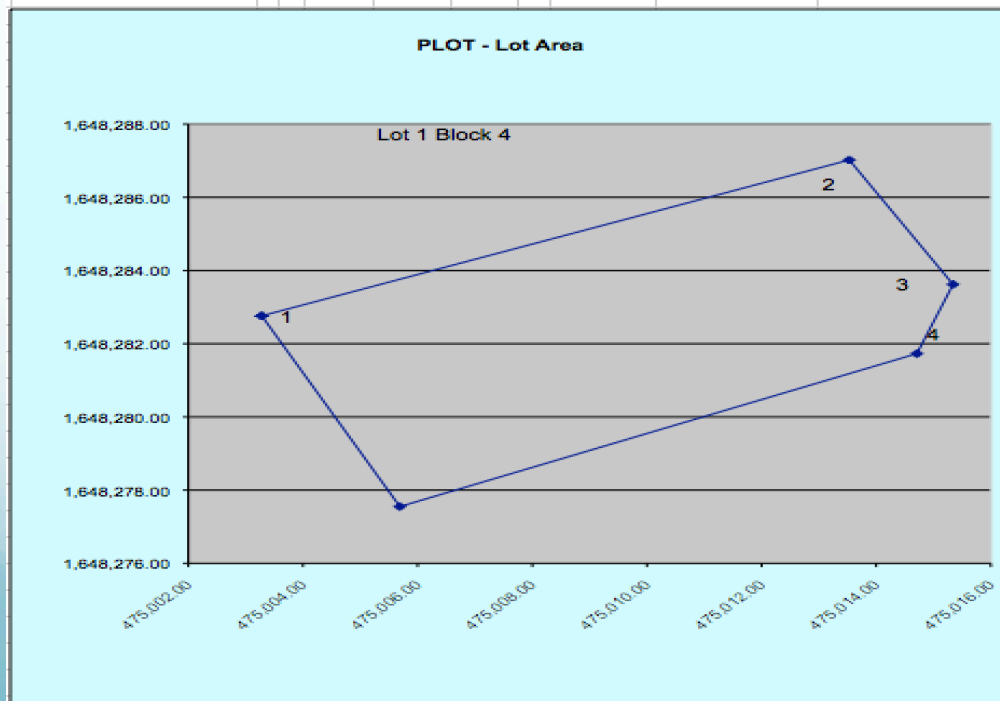
# GIS

- Before ..... GIS ....
- Gather/Collect Data ...
- Create Database
  - Databasing Basics.....
    - Technical Descriptions to Spreadsheet Files to Database
    - Survey Plans to CAD File or Scanned Images to Georeferenced Images to Database
    - Titles / Lotdata Computation Sheets to Scanned Images to Database

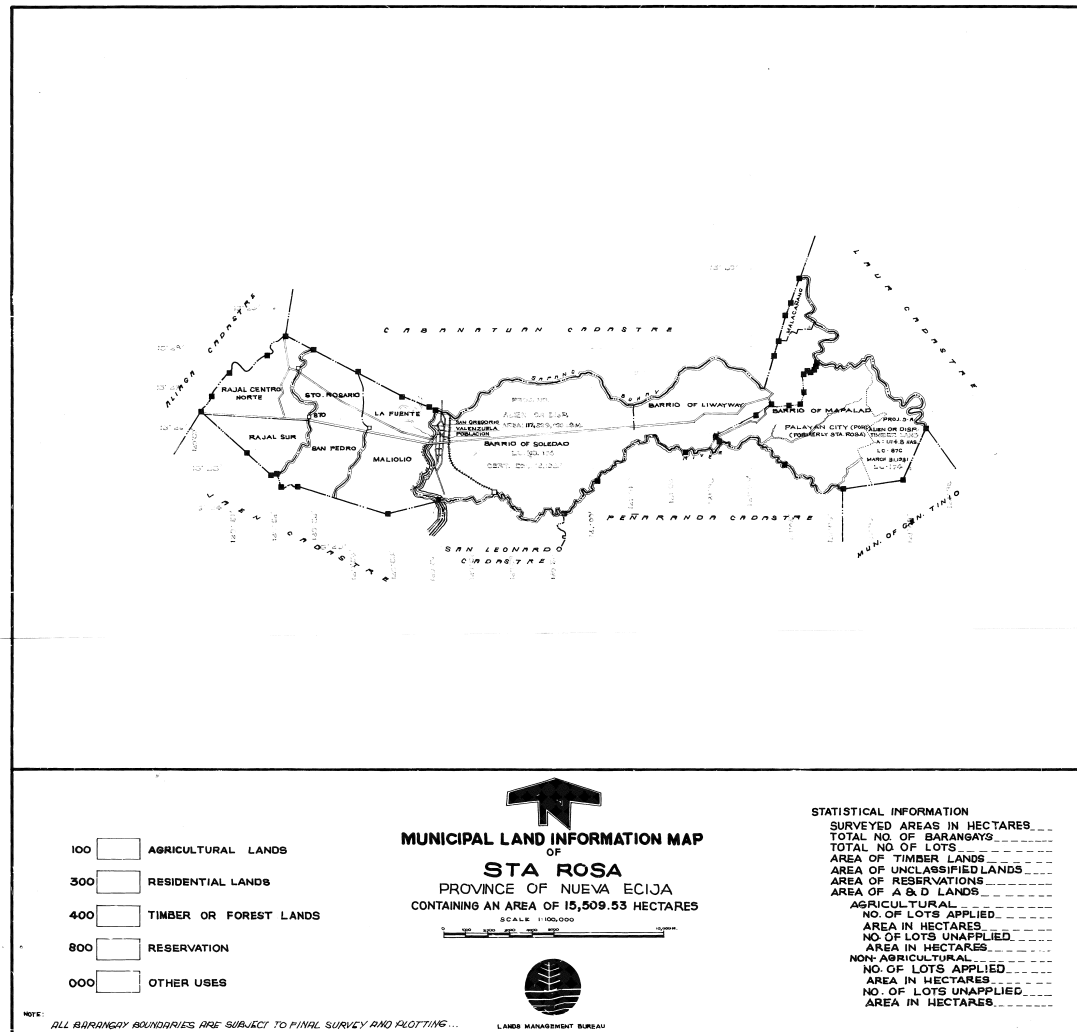
# Enhancing the Method: Spreadsheets and Maps

- Simple, functional and most of all practical...

LOT OWNER:		Central Plains Realty & Development Corporation			LOT NO.		Lot 19 Block 9			
BARANGAY / BARRIO:		Bagbag (Iba O'Este)			AREA (SQ.M.):		60.94			
MUNICIPALITY / CITY:		Calumpit			OCT / TCT NO:		T-263645			
PROVINCE / METRO:		Bulacan			DATE OF ISSUANCE:		13-Mar-08			
REFERENCE:		BLLM#1			LOT PLAN NO:		Pcs-03-015687			
TECHNICAL DESCRIPTION										
LINE	BEARING			DISTANCE	LATITUDE	DEPARTURE	NORTHING	EASTING	REMARKS	
BL - 1	S	1	51	E	1395.66	(1,394.93)	45.05	1,648,282.76	474,958.230	PS. C.C.M.
1 - 2	N	67	25	E	11.11	4.26	10.25	1,648,287.02	475,013.53	PS. C.C.M.
2 - 3	S	28	4	E	3.86	(3.40)	1.81	1,648,283.82	475,015.34	PS. C.C.M.
3 - 4	S	18	32	W	2.00	(1.89)	(0.63)	1,648,281.73	475,014.71	PS. C.C.M.
4 - 5	S	65	8	W	9.95	(4.18)	(9.02)	1,648,277.55	475,005.69	PS. C.C.M.
5 - 1	N	24	52	W	5.75	5.21	(2.41)	1,648,282.76	475,003.28	PS. C.C.M.
AREA :		61		SQ.M.		RELATIVE ERROR OF PRECISION: 1:		5.54		



# DENR REGION 3 DATA – MUNICIPAL LAND INFORMATION MAP





# DENR REGION 3 DATA - CONTROL POINT COORDINATE LISTING

BLM #	NORTHINGS / ATTITUDE	EASTINGS / LONGITUDE	REFERENCE POINT
2	19740.789	20127.979	-8.43 + 4.29
3	19605.954	18245.914	
4	19874.985	17743.895	
5	21093.89	17924.07	
6	21278.24	17678.76	
7	21202.346	15568.203	
8	21425.098	15203.964	
9	22819.23	14942.25	
10	22978.73	14741.14	
11	22591.735	13233.138	
12	22821.978	12715.758	
13	22830.35	12584.26	
14	23978.04	12324.24	
15	21818.02	10915.39	
16	21744.08	11174.30	
17	20375.43	11318.68	BM#17 = 1984.10
18	20269.01	11597.01	
19	21077.74	12970.61	
20	20888.49	13717.46	
21	19741.64	14935.43	
22	19811.55	15221.73	
23	18703.96	14867.75	
24	18445.88	15136.15	
25	18070.89	17003.60	
26	18164.09	17251.31	
27	17488.62	18175.99	

B.L. NO. CAD-269 LOCATION Sta. Rosa, Surin Cap  
 COMPILED BY: [Signature] DATE: 11-10-89 CHECKED BY: [Signature]

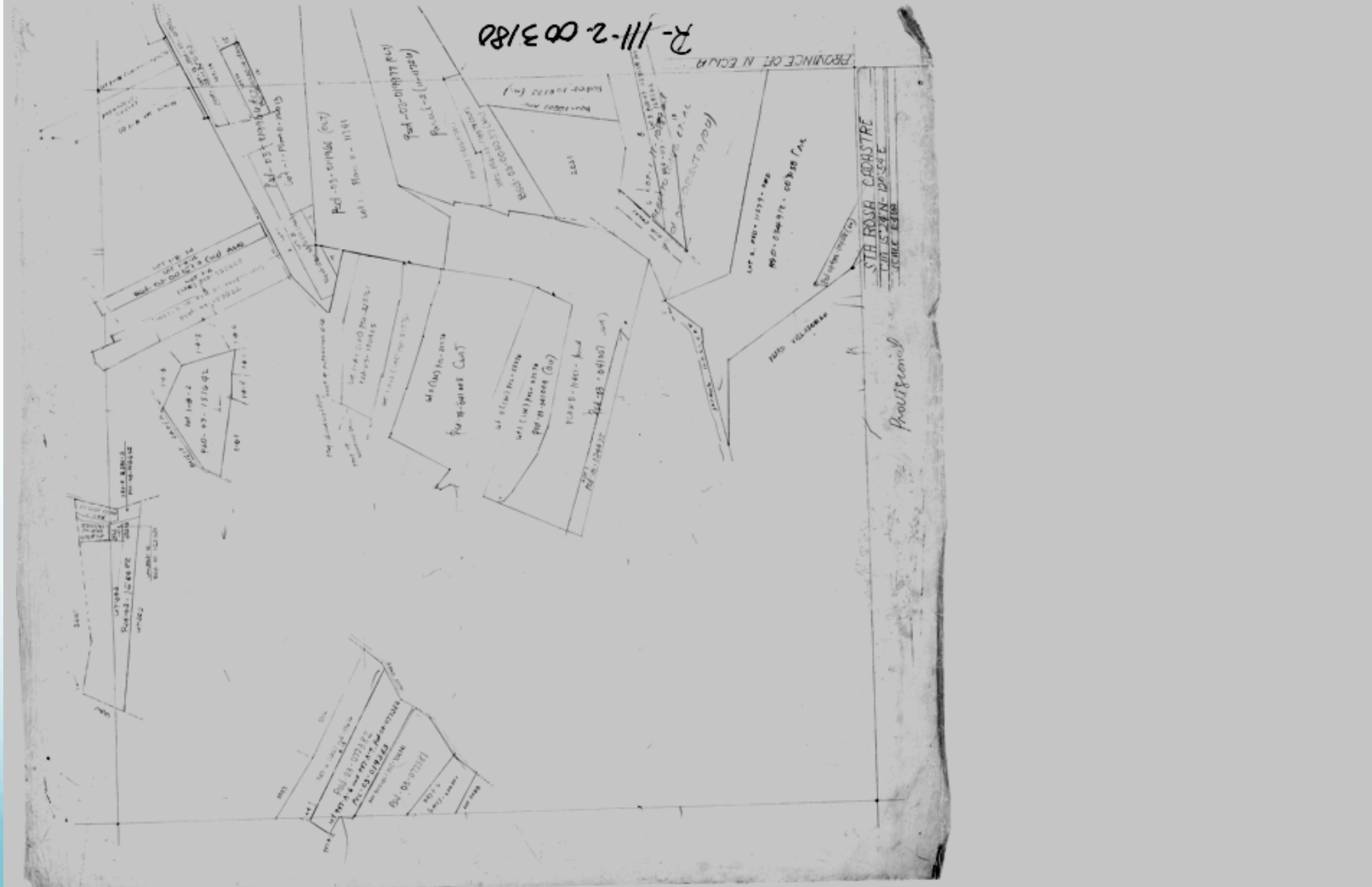
SURVEY CONTROLS SECTION  
 PLANE/GRID COORDINATES

MBM 38 = MBM 29, Peniculan Cad. 226-18968.69 - 35204.14

REFERENCE POINT	NORTHINGS / ATTITUDE	EASTINGS / LONGITUDE	REFERENCE POINT	NORTHINGS / ATTITUDE	EASTINGS / LONGITUDE
MBM 12	178619	16242.32	MBM 12	178619	16242.32
MBM 1	25099.75	13231.51	MBM 1	25099.75	13231.51
MBM 2	24414.83	14382.37	MBM 2	24414.83	14382.37
MBM 3	23292.00	16480.73	MBM 3	23292.00	16480.73
MBM 4	22181.71	18093.13	MBM 4	22181.71	18093.13
MBM 5	21643.03	19621.45	MBM 5	21643.03	19621.45
MBM 6	21553.48	19026.02	MBM 6	21553.48	19026.02
MBM 7	22577.85	34909.96	MBM 7	22577.85	34909.96
MBM 8	21431.05	34201.52	MBM 8	21431.05	34201.52
MBM 9	19821.80	32229.08	MBM 9	19821.80	32229.08
MBM 10	17407.41	26037.29	MBM 10	17407.41	26037.29
MBM 11	17570.77	25780.92	MBM 11	17570.77	25780.92
MBM 12	17985.88	16032.70	MBM 12	17985.88	16032.70
MBM 13	18348.10	13340.33	MBM 13	18348.10	13340.33
MBM 14	18885.72	12901.23	MBM 14	18885.72	12901.23
MBM 15	19755.23	12016.40	MBM 15	19755.23	12016.40
MBM 16	20817.45	12019.47	MBM 16	20817.45	12019.47
MBM 17	21923.66	10559.17	MBM 17	21923.66	10559.17
MBM 18	22158.63	9728.13	MBM 18	22158.63	9728.13
MBM 19	24037.17	35257.52	MBM 19	24037.17	35257.52
MBM 20	24843.34	35452.87	MBM 20	24843.34	35452.87
MBM 21	25902.67	35709.85	MBM 21	25902.67	35709.85
MBM 22	26938.91	35878.59	MBM 22	26938.91	35878.59
MBM 23	27807.72	36171.64	MBM 23	27807.72	36171.64
MBM 24	28329.10	36904.44	MBM 24	28329.10	36904.44
MBM 25	22193.09	38609.88	MBM 25	22193.09	38609.88
MBM 26	22128.72		MBM 26	22128.72	
MBM 27	20726.10	41992.01	MBM 27	20726.10	41992.01
MBM 28	18729.11	41033.69	MBM 28	18729.11	41033.69
MBM 29	18142.23	38206.27	MBM 29	18142.23	38206.27
MBM 30	16906.53	19741.29	MBM 30	16906.53	19741.29
MBM 31	16780.10	17620.42	MBM 31	16780.10	17620.42
MBM 32	18147.28	13722.52	MBM 32	18147.28	13722.52

NO Cad-269 LOCATION: Sta. Rosa N. Ecija ZONE  
 BY: [Signature] DATE: 7-7-89 CHECKED BY: [Signature] DATE:  
 Note: MBM #21 (Coordinates) was taken from Lot # 2436 + 2437, Cad 269, Sta. Rosa, N.E.

# DENR REGION 3 DATA – CADASTRAL MAPS AND



Spreadsheet → GIS



# Tools to use

- Use Free Open Source Software (FOSS)
  - CAD – LibreCAD
  - qGIS
  - CMS - Joomla

OpenStreetMap

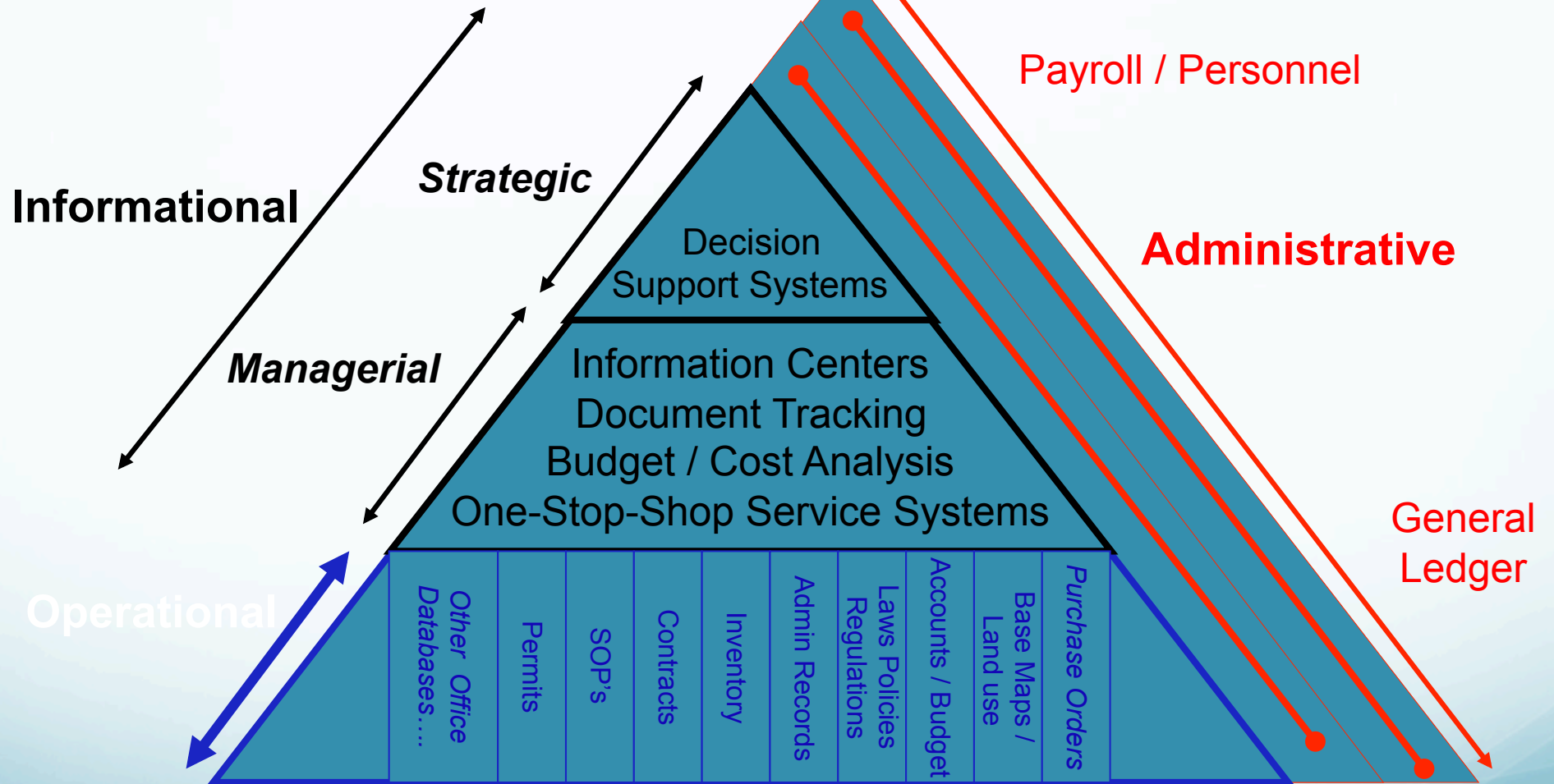
Google Maps

Sample

# GIS is successful

- when it is used as a decision-making tool within the community/ organization, and
- when it serves as a linking mechanism between different groups and / or levels of government in the community.

# IS Framework



# Membership Database

- For CPD Points
  - Matrix of CPD units
- For organizational matters
- For Renewal of License
- For membership benefits



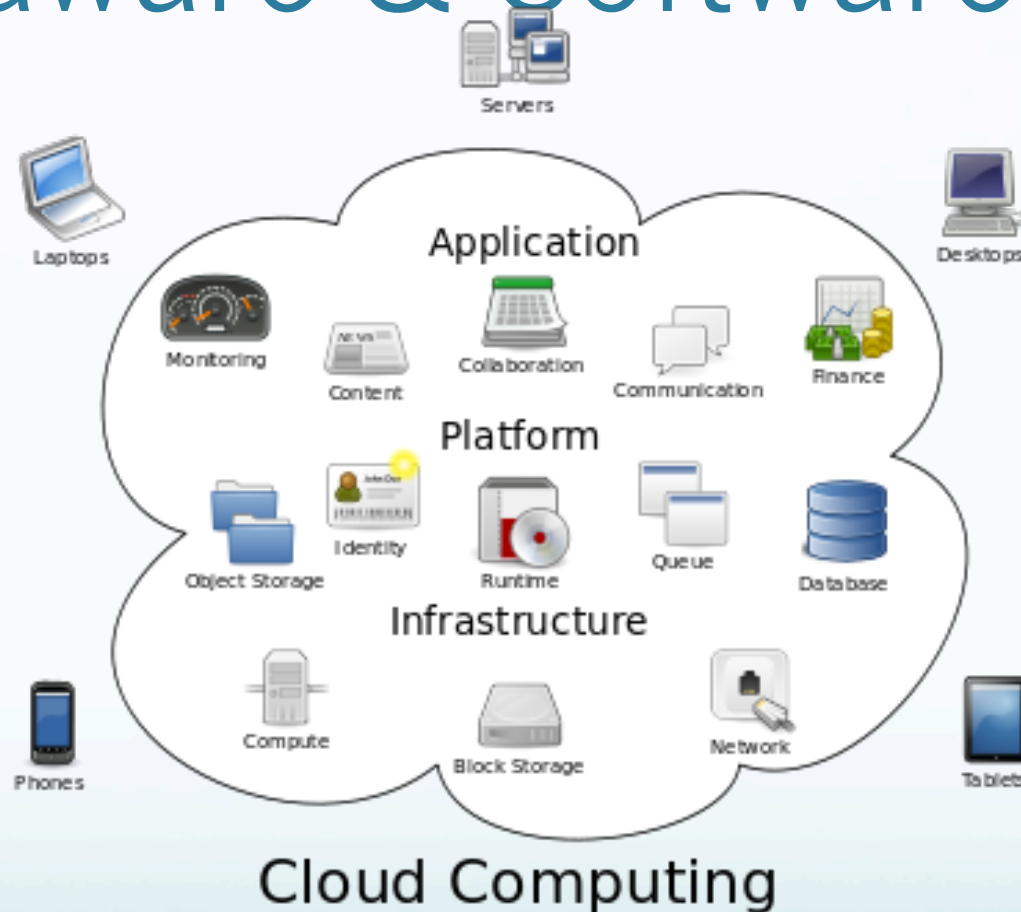
# GEP Member Benefit

- Database
  - NAMRIA GCPs
  - BLLMS
  - MLIM
  - BBIM
  - Etc.
    - <http://cadastre.geoidex.com>

# The first steps?

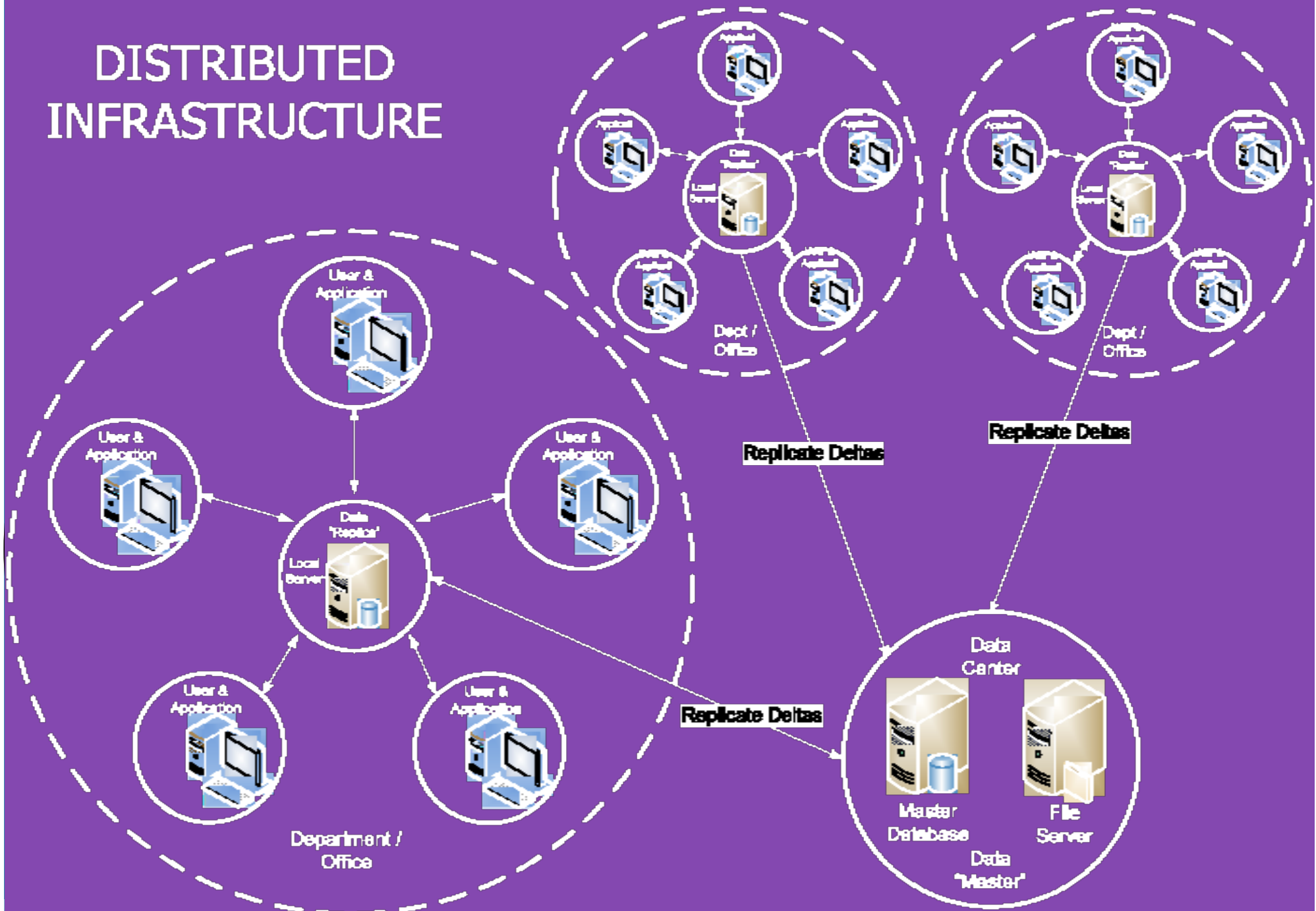
- Regional Website
  - Domain name – <http://gepr3.org>
  - Website Hosting examples
    - <http://inmotionhosting.com>
    - <http://godaddy.com>
    - Web Search “Top 10 Hosting Providers”
- Purpose:
  - Announcements / events
  - Cadastral Databases

# Hardware & Software



Cloud computing logical diagram

# DISTRIBUTED INFRASTRUCTURE





# Member of Good Standing

- Access to database
- Trainings

What else can we provide?

# Thank You and At your Service!

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