



INVITACION

Lanzamiento del curso:
Mapeo para la Gestión de activos
Conferencias y exhibición de equipos

Conferencista Internacional:
PhD David Thomas Iseley
Presidente BAMI-I



Fecha: 1 de agosto de 2019

Horario: 9:00am - 12m

Lugar: Pontificia Universidad Javeriana-auditorio Pablo VI

Inscripción sin costo alguno para:
empresas y emprendedores del mapeo de redes subterráneas

Confirmar asistencia al e-mail: asociacionictis@gmail.com

MAPPING FOR ASSET MANAGEMENT



Presenter: *Professor Tom Iseley, Ph. D., P.E., Dist. M. ASCE, PWAM*

CETF Professor, Civil Engineering

Eminent Scholar Chair in Construction

Trenchless Technology Center

Assoc. Director, International Operations

Louisiana Tech University

Chair, BAMI-I Board of Directors

President, International Infrastructure Solutions, LLC

Adjunct Professor, Xi'an Jiaotong University, China

AM WATER & SEWER

Definition

Address customers' immediate service requirements while managing the system assets to meet long-term requirements reliably & cost effectively

Long-term AM results in:

- **Increased Asset Life**
- **Decreased Maintenance Costs**
- **Decreased Capital Costs**
- **Permits planned spending based on critical needs.**
- **Allows scarce financial resources to be effectively used.**
- **Potentially increases revenues by revealing opportunities to sell or lease land or retired assets, sell excess capacity, provide outside services, or initiate new business.**

AM: Origins in the Utility Industry

- **1972 Clean Water Act (PL 92-500)**
 - **Launched NPDES (National Pollutant Discharge Elimination System)**
 - **First steps towards SSES (Sewer System Evaluation Survey)**

- **AM Continued Advancement**
 - **CMOM (Capacity, Management, Operation, Maintenance Program)**
 - **GASB 34 (General Accounting Standards Board) - requirements**

WATER & SEWER CHAMPION

Mayor Shirley Franklin – Atlanta’s Sewer Mayor

- Atlanta Journal-Constitution – July 15, 2002

Atlanta eager to develop world-class sewer system

- People worldwide dream of living in a community with clean water, plentiful jobs and affordable housing. Over the Next 12 years, Atlanta will make its largest investment ever in such a dream. To assure high water quality and long-term economic stability for ourselves, our children and grandchildren, we are embarking on a \$3B sewer improvement program.
- Most of this investment is required under a federal court order --- **it is our opportunity to develop a world-class sewer system (water program)**

**THE ROADMAP TO ACCOMPLISH MAYOR
FRANKLIN'S VISION REQUIRES AM FOR
ASSURING SUSTAINABILITY**

Requires:

- Innovation
- Validation
- Education

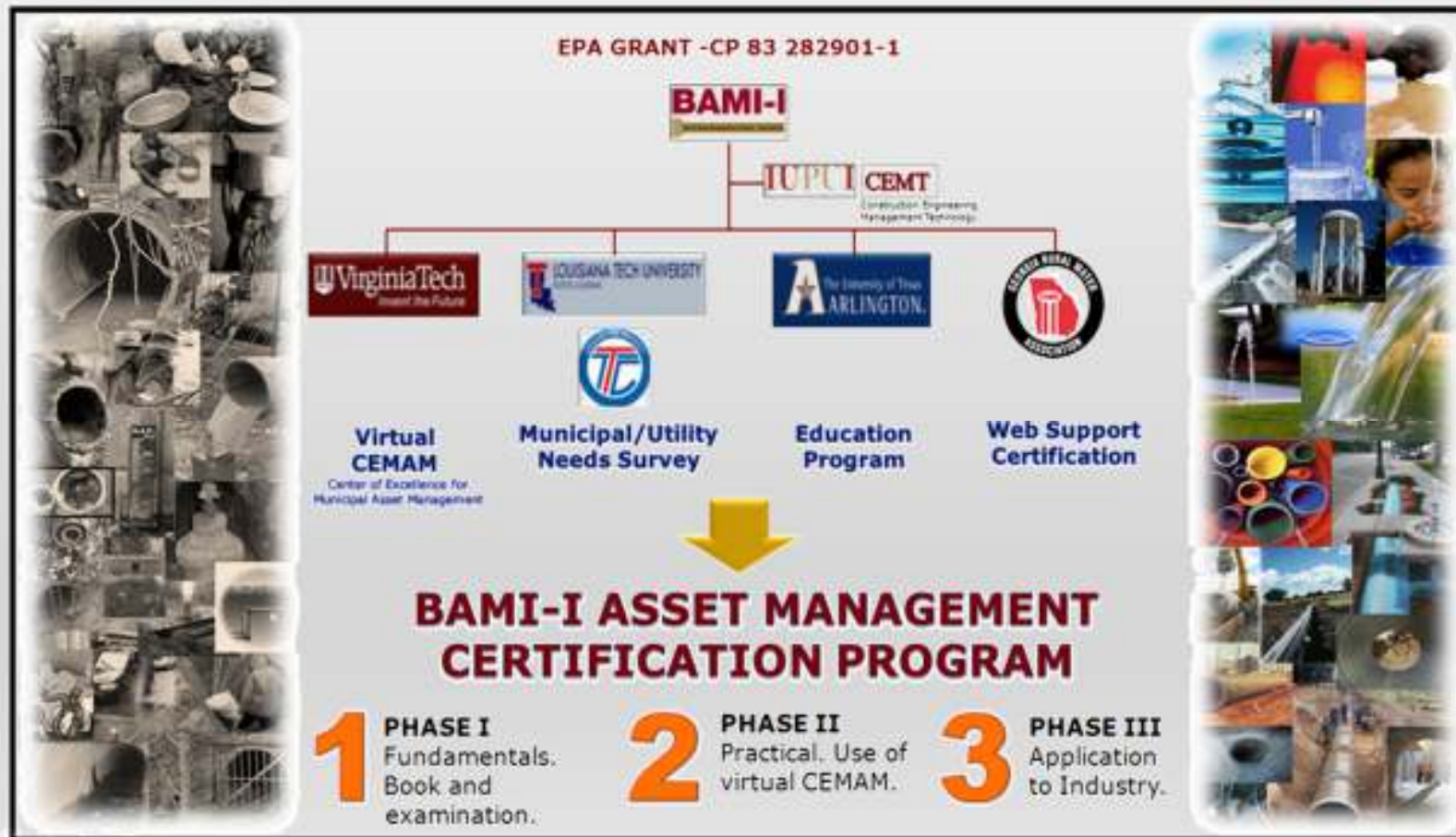
BAMI-I background



- In 2003, formed in Atlanta's Department of Watershed Management as a result of inspiration & leadership by Mayor Shirley Franklin & Commissioner Jack Ravan.
- In June 2004, formed as non-profit organization.
- Serves to provide a center of excellence for owners of underground water infrastructure to join with industry and researchers:



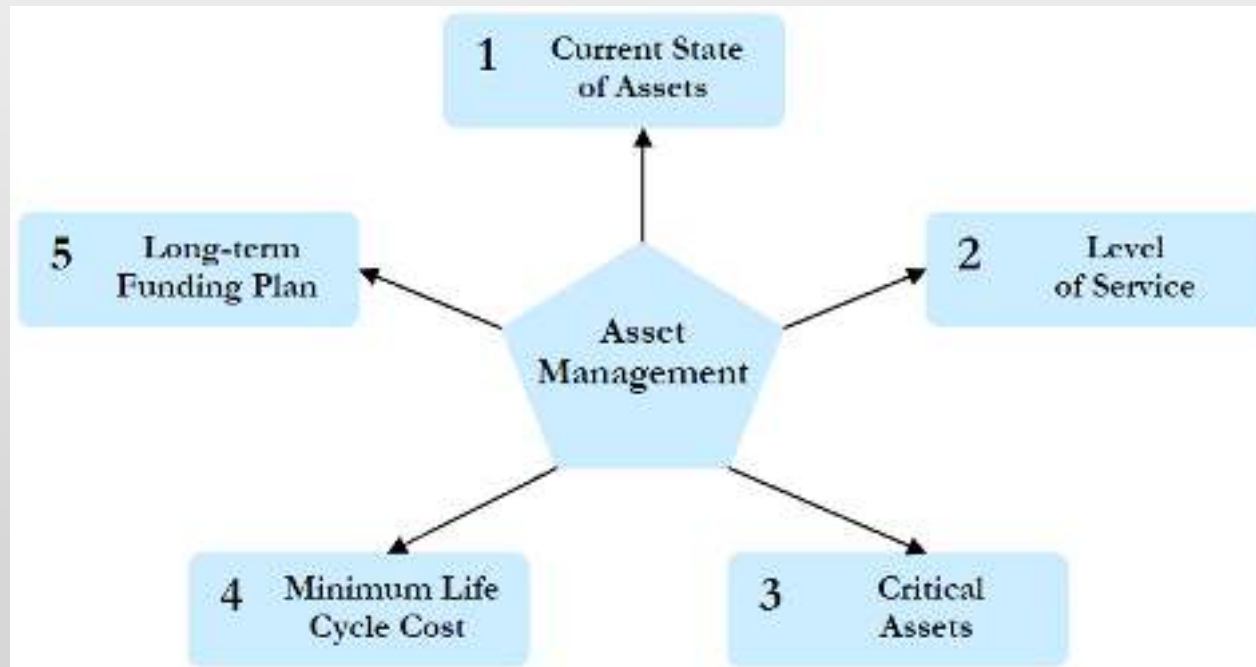
ESTABLISHING A PATHWAY FOR ACHIEVING WATER UTILITY INFRASTRUCTURE MANAGEMENT EXCELLENCE



BAMI-I background

OUR ROADMAP AND VISION FOR ENGAGING CURRENT AND FUTURE DECISION-MAKERS MUST ADDRESS:

Five Core Components of an Asset Management Framework

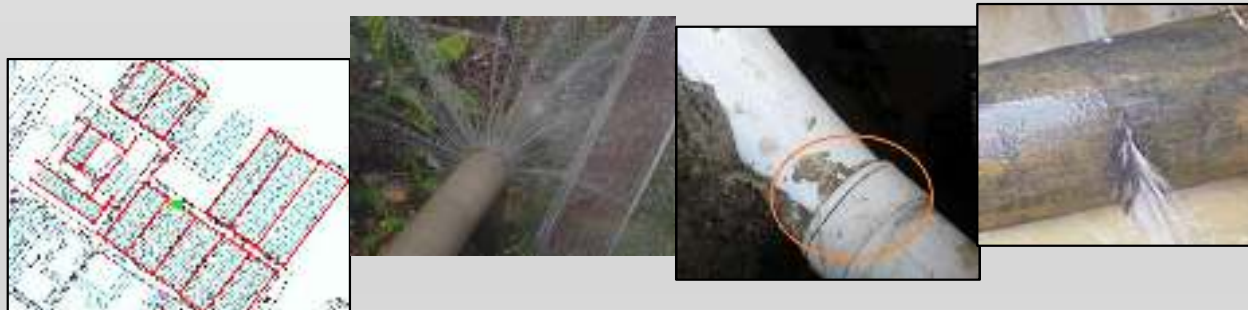


Resource: EPA Asset Management_Best Practices

Asset Management Strategies

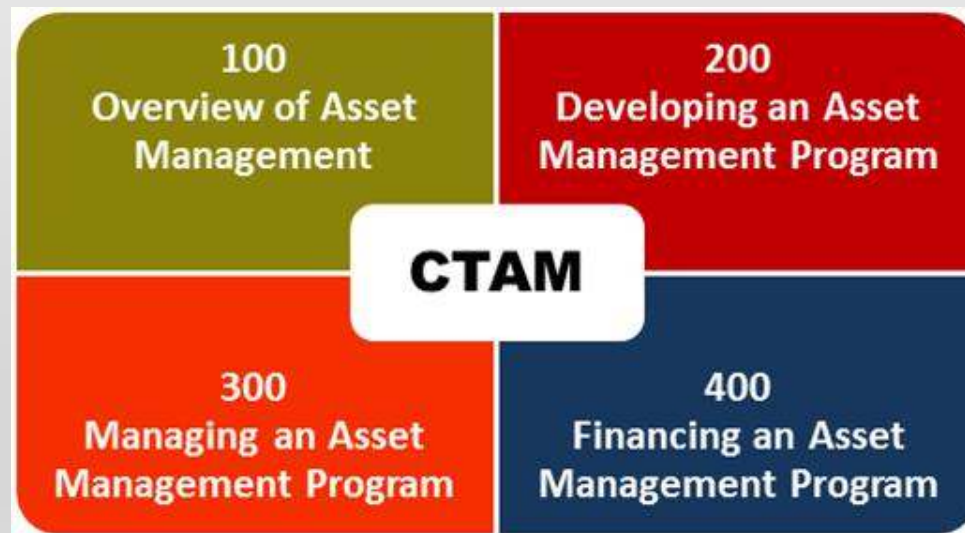
1- What is current state of my assets?

- What assets do we have – Inventory
- Where are they located - Mapping
- What are their condition - PCA
- Determine remaining life
- Determine renewal/replacement cost & date



WHAT IS CTAM?

- Certification of Training in Asset Management
- Exclusive four-part series training



LEVELS OF CERTIFICATION

- **Certificate of Completion.**
 - Issued for any CTAM course upon completion.
- **Associate Water Asset Manager (AWAM). Required:**
 - Completion of CTAM 100-400
 - Apply to BAMI-I Asset Mgt. Certification Board
- **Professional Water Asset Manager (PWAM). Required:**
 - Completion of CTAM 100-400
 - Four years of relevant asset mgt. experience
 - Apply to BAMI-I Asset Mgt. Certification Board

**TTC AND BAMI-I LAUNCH A COMPREHENSIVE ASSET
MANAGEMENT CERTIFICATION PROGRAM**

Raleigh, NC August 17 – 20, 2015

24 Attendees



TTC AND BAMI-I LAUNCH A COMPREHENSIVE ASSET MANAGEMENT CERTIFICATION PROGRAM

Columbus, OH - May 16 – 19, 2017

34 Attendees



BAMI-I CTAM Workshop
UCTA-North Texas - Nov 5 – 8, 2018 - Lewisville, TX
47 Attendees



BAMI-I CTAM Workshop
City of Atlanta, Department of Watershed Management (DWM)
September 9-12, 2019



For more information, contact:

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CURSO DE MAPEO PARA LA GESTION DE ACTIVOS

Congreso Latinoamericano de Tecnología Trenchless y No Dig

1º de agosto 2019

Alicia Paz-Solís, BS Civil Engineering, MS Water Resources
Propuesta para el BAMI-I y el ICTIS

PROPOSAL TO BAMI-I AND CISTT FOR ONLINE/CLASSROOM COURSE DEVELOPMENT ON *MAPPING FOR ASSET MANAGEMENT*

ON-LINE/CLASSROOM *MAPPING FOR ASSET MANAGEMENT* COURSE TABLE OF CONTENTS [DRAFT]

CHAPTER 1 Introduction to Geographic Information Systems

- 1.1 Uses
- 1.2 Benefits
- 1.3 Functionality
 - 1.3.1 Storing Spatial Information
 - 1.3.2 Layers
 - 1.3.3 Database Linkages (GPR)
 - 1.3.4 Queries and Reports
 - 1.3.5 Attached Images (CCTV)
- 1.4 WebGIS
- 1.5 Metadata Overview

CHAPTER 2 Data Collection/Management

- 2.1 Data Sources
- 2.2 Data Collection
 - 2.2.1 Planning Data Collection
 - 2.2.2 Prioritizing Data Collection
 - 2.2.3 Deciding Level of Detail
 - 2.2.4 Global Positioning Systems (GPS)
- 2.3 Attributes for Asset Management
- 2.4 Data Maintenance
- 2.5 Pilot Programs/Projects

CHAPTER 3 GIS for Asset Management

- 3.1 Asset Register
- 3.2 Asset Hierarchy
- 3.3 Condition and Performance Monitoring
- 3.4 Risk Assessment
 - 3.4.1 Consequence of Failure
 - 3.4.2 Probability of Failure

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CHAPTER 4 Asset Management Information Systems

- 4.1 GIS Integration with other Asset Management Information (AMI) Systems
 - 4.1.1 Computerized Maintenance Management Systems (CMMS)
 - 4.1.2 Supervisory Control and Data Acquisition (SCADA)

CHAPTER 5 Case Studies (Country/Topic Specific)

- 5.1 US
- 5.2 Colombia
- 5.3 Other

CHAPTER 6 Summary

REFERENCES

CURSO DE MAPEO PARA LA GESTION DE ACTIVOS

CONTENIDO

- I. Visión del Curso
- II. Propuesta
- III. Tabla de Contenido

Alicia Paz-Solís
Propuesta para el BAMI-I y el ICTIS

CURSO DE MAPEO PARA LA GESTION DE ACTIVOS

I. VISION DEL CURSO

- Curso en línea/en persona, en Inglés y Español
- **Certificación** para profesionales y técnicos de la infraestructura subterránea
- Redes subterráneas de agua, desagüe, gas, electricidad, tele(comunicación)

“Out of sight, out of mind”



Nobody Knows What Lies Beneath New York City

CURSO DE MAPEO PARA LA GESTION DE ACTIVOS

II. PROPUESTA

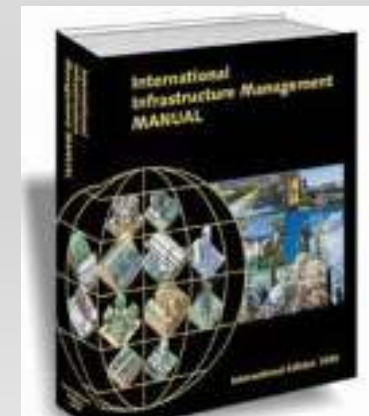
- Metas y objetivos dictados por BAMI-I y ICTIS
- Mejores practicas en la industria
- Revisión de Literatura (Literature Review)
- Estudio de casos

CURSO DE MAPEO PARA LA GESTION DE ACTIVOS

II. PROPUESTA

Mejores practicas en la industria

- ASCE 38-02
- US Environmental Protection Agency (EPA)
- Utility Engineering & Surveying Institute (UESI)
- Subsurface Utility Engineering Association
- Certification of Training in Asset Management (CTAM)
- International Infrastructure Management Manual (IIMM)



CURSO DE MAPEO PARA LA GESTION DE ACTIVOS

II. PROPUESTA

Mejores prácticas en la industria

- **ASCE 38-02**

Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data.

Establishes quality levels A, B, C, and D for utility data.

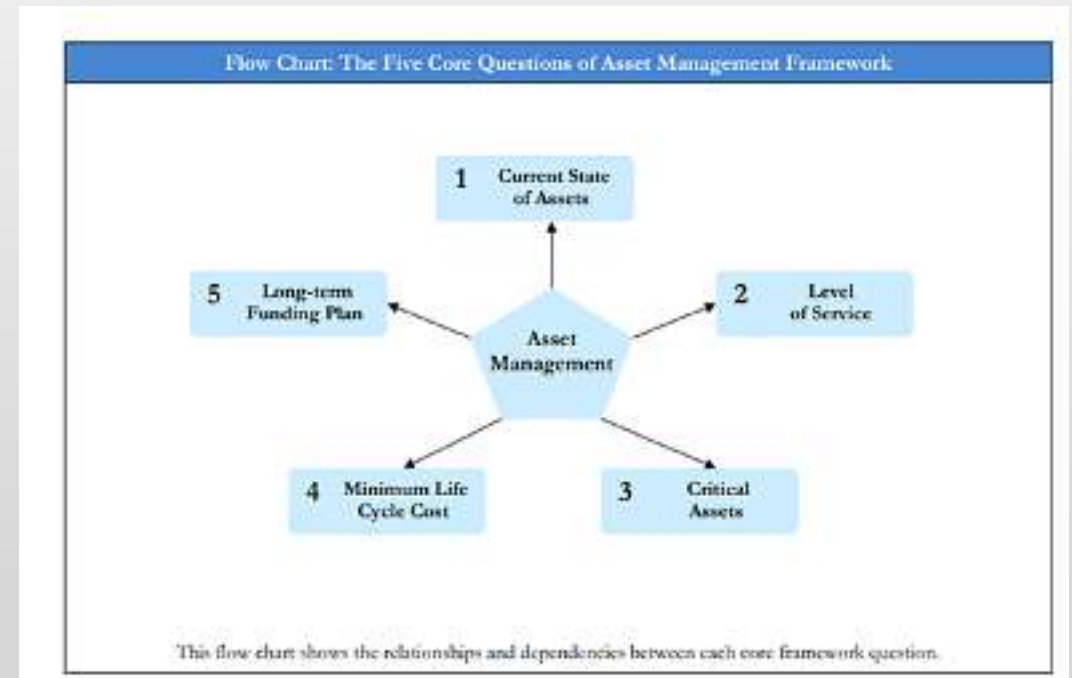
LEGEND			
COLOR/LINE CODES	SYMBOLS		
.....C _W	CITY WATER	□	MANHOLE
.....F ₂	FIRE PROTECTION	●	DROP INLET
.....FM.....	REFRESHING WATER	□	UTILITY POLE
.....D ₁	DEIONIZED WATER	□	LIGHT POLE
.....C _{DM}	CHILLED WATER	⊗	VALVE
.....G ₁	GAS	⊕	FIRE HYDRANT
.....PROPANE.....	PROPANE	⊖	UTILITY END POINT
.....STEAM.....	STEAM	⊙	RISER
.....C ₁	CONDENSATE RETURN	⊕	HANDHOLE, BOX
.....C ₂	COMPRESSED AIR	□	PEDESTAL TRANSFORMER
.....N ₁	NITROGEN	⊙	ROLLING
.....O ₁	OXYGEN	⊙	SIGN
.....C ₁	CARBON DIOXIDE	□	HOUSE TRAP
.....T ₁	TELEPHONE	⊙	"QUALITY LEVEL A" DATA POINT
.....E.....	ELECTRIC	⊙	
.....S ₁	CHEMICAL SEWER	⊙	
.....S ₂	UNKNOWN FUNCTION	⊙	
.....ST.....	STORM	⊙	
.....	LINE CODE FOR OLD OR OLD INFORMATION		
ABBREVIATIONS			
F.O.	FIBER OPTIC		
ESDI	END OF SURFACE GEOPHYSICAL INFORMATION		
ESDI	END OF RECORD INFORMATION		
AKTU	UTILITY ABANDONED ACCORDING TO UTILITY RECORDS		
AKFI	UTILITY ABANDONED ACCORDING TO FIELD INSPECTION		
BAFU	EMPTY ACCORDING TO UTILITY RECORDS		
NAP	NO ASSOCIATED PIPES FOUND FROM STRUCTURE		
NAC	NO ASSOCIATED CABLES FOUND FROM STRUCTURE		
NOTES			
NOTE 1: "QUALITY LEVEL A" DATA POINTS INDICATED BY SYMBOL ⊙. SEE QLA SUPPLEMENTAL DATA FORM FOR ADDITIONAL UTILITY INFORMATION.			
NOTE 2: ALL "QUALITY LEVEL A" ELEVATIONS ARE FOR THE TOP OF THE UTILITY UNLESS OTHERWISE NOTED.			
NOTE 3: ALL UTILITIES DEPICTED AT "QUALITY LEVEL B" UNLESS INDICATED BY DOTTED LINE CODE (.....) AND LABELED "QLC" OR "QLD".			

CURSO DE MAPEO PARA LA GESTION DE ACTIVOS

II. PROPUESTA

Mejores prácticas en la industria

- **US Environmental**
- **Protection Agency**



Alicia Paz-Solís

Propuesta para el BAMI-I y el ICTIS

CURSO DE MAPEO PARA LA GESTION DE ACTIVOS

II. PROPUESTA

Mejores prácticas en la industria

- **Utility Engineering & Surveying Institute (UESI)**

Technical activities, conferences, and the development of internationally recognized standards.

WHAT IS UTILITY ENGINEERING?

"Utility Engineering is a branch of Civil Engineering that focuses on the planning, position, design, construction, operation, maintenance, and asset management of any and all utility systems, as well as the interaction between utility infrastructure and other civil infrastructure.



CURSO DE MAPEO PARA LA GESTION DE ACTIVOS

II. PROPUESTA

Mejores prácticas en la industria

- **Subsurface Utility Engineering Association**

Promotes knowledge, best practices, and the exchange of information in the profession; ensure the protection of public health, welfare and safety; and educate clients and other stakeholders of the value and benefits of subsurface utility engineering services.

CURSO DE MAPEO PARA LA GESTION DE ACTIVOS

II. PROPUESTA

Mejores prácticas en la industria

- **Certification of Training in Asset Management (CTAM)**

Dr. Tom Iseley

It is an exclusive four part series in Asset Management coursework and certification. CTAM has been developed by BAMI-I (Buried Asset Management Institute - International) in conjunction with the Trenchless Technology Center at Louisiana Tech and Indiana University-Purdue University at Indianapolis, in partnership with UIM: Water Utility Infrastructure Management, and is hosted by the Trenchless Technology Center at Louisiana Tech. CTAM is offered online and in classroom format.

CURSO DE MAPEO PARA LA GESTION DE ACTIVOS

II. PROPUESTA

Mejores prácticas en la industria

International Infrastructure Management Manual (IIMM) by IPWEA/NAMS

Institute of Public Works Engineering Australia

New Zealand National Asset Management Steering Group

- Manual provides guidelines for best management practices for **all** infrastructure assets in the public and private sectors at the lowest lifecycle cost.

CURSO DE MAPEO PARA LA GESTION DE ACTIVOS

III. TABLA DE CONTENIDOS

- CAPITULO 1: Introducción a los Sistemas de Información Geográfica (SIG)
- CAPITULO 2: Recolección y Manejo de Datos
- CAPITULO 3: SIG para la Gestión de Activos
- CAPITULO 4: Gestión de Activos y Sistemas Computarizados
- CAPITULO 5: Estudio de Casos

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GIS for Asset Management

- 3.1 Asset Register
- 3.2 Asset Hierarchy
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- 3.4 Risk Assessment (Capital Improvement Planning)
 - 3.4.1 Consequence of Failure
 - 3.4.2 Probability of Failure

Riesgo = Probabilidad de Amenaza x Magnitud de Daño

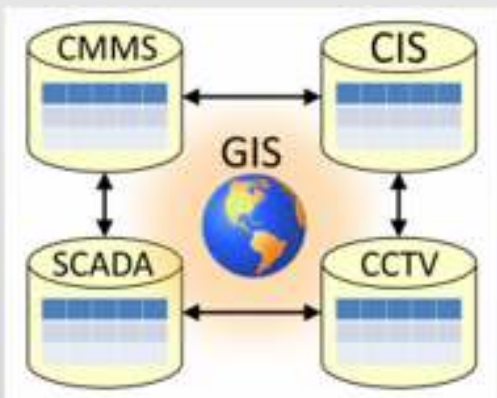


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Thanks for your attention!

Questions?

Contact information

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