出國報告（出國類別：考察）

2010 年「美國 NEPAssist 作業系統暨地理資訊系統（GIS）應用於環評監督業務」

服務機關：行政院環境保護署
姓名職稱：卓景琪　技正
派赴國家：美國
出國期間：99 年 11 月 7 日 99 年 11 月 15 日
報告日期：100 年 2 月 15 日

摘　　要

報告名稱：

2010 年「美國 NEPAssist 系統暨地理資訊系統（GIS）應用於環評監督業務」出國考察計畫

出國人員/服務機關/職稱：卓景琪　環境督察總隊　技正

出國類別：考察

出國地區：美國

出國期間：99 年 11 月 7 日至 11 月 15 日

報告日期：100 年 2 月 15 日

分類：環境保護/環境影響評估

內容摘要：

　　本報告係本署於「中美環境保護技術合作協定」第 8 號執行辦法中就 NEPAssist 地理資訊系統運用在美國家環境政策(NEPA)、環境影響評估審查及監督的功能進行考察之初步成果。本次考察除聽取美方 NEPAssist 的功能介紹外，並蒐集靜態文獻資料，並藉由美方人員實地操作及講解，並與美方 NEPAssist 地理資訊系統實務人員進行談論，瞭解 NEPAssist 係以開發地點歷史影像及環境資訊整合資料庫，能以線上就開發計畫、規模、區位及影響評估能力等建立即時環評追蹤監督能力，並提供環境影響評估審查篩選（Screening）參考。

　　本次美國考察議程除與美方討論 NEPAssist 地理資訊系統實務外，並希望討論本項合作項目未來作法，為利與美方討論，本次出國前即與美方多次聯繫並取得美方 NEPAssist 地理資訊系統試用帳號，初步認識其功能性外，並預擬未來規劃暨合作之可能性。本次出訪地點大都位於美國華盛頓特區之美國環保署總部，包括：美國環保署 OECA 辦公室、空氣污染防制辦公室、爭端預防與解決中心、美國聯邦法務部環境與資源組，以及位於華盛頓特區之民間環保團體-華盛頓環境法律研究中心等。此行除進一步瞭解該系統發展及功能性之外，另對美方推廣該系統之技術意願及該系目前該系統已有中南美洲如尼加拉瓜、薩爾瓦多、多明尼加等十餘國加入合作夥伴。如未來引進該系統，可在環境即時資訊分享及合作外，亦可繼續就多樣之環保政策議題及環境資訊等進行雙方深入合作。

目　　次

壹、目的

　　本項考察美國政府機關或學術研究機構，熟悉 GIS 作業環境及應用於環境影響評估監督之執行情形。

1. 考察美國推動 NEPAssist 之技術參考指引及應用，可提供台灣在環境影響評估監督業務中結合 GIS 系統參考。

2. 針對通過審查之環評個案，開發其歷時資訊管理系統參考，如基地之環境區位變化、環境地形改變等資訊能即時監控，提升我國執行環評監督之執行效益。

3. 本署目前管制通過環評審查之開發案件 1 千 1 百餘件，散佈於全國各地區包括高山、平原、海岸、森林等不同地點，開發類別包括工廠、工業區、採礦、發電廠、大型社區、高速公路、高速鐵路等，這些案件依據我國環境影響評估法規於獲得許可開發前均提出環境影響說明書或環境影響評估報告書送交環保署進行環評審查，這些書件內容開發單位通常均承諾許多環境保護及環境補償方案(或計畫)，在審查通過後這些書件內容依法開發單位必須切實執行，而法律亦要求環保署需監督其執行情形，環保署根據法律對於不遵守承諾的開發單位可處以罰鍰、要求改善或進一步要求開發單位檢討其行為對環境造成影響的程度並提出對策。

4. 本署環境督察總隊目前僅 8 人從事該 1 千餘件開發案監督工作，負荷相當沉重，且各開發案所在位置許多均位於交通不便或不易到達地區，以致本署環境督察總隊很難有效掌握各案開發現況及期造成之影響，以 2009 年本署環境督察總隊共執行監督 346 件次監督為例，平均每案約 3 年始能監督一次，如有像 NEPAssit 系統的協助，應可有效提昇監督效率。另大規模之開發行為，如水庫興建，其範圍遼闊，需藉助空照圖或衛星照片，始能全面性瞭解。

5. 開發進行及使用對周遭環境之影響程度需依其歷史資料提供比對，方能有所瞭解，因此歷史整合資料亦是本署環境督察總隊所欠缺。

貳、過程
一、出國行程概述

99.11.07		啟程（台灣時間）、抵達美國華盛頓特區（美國時間）
99.11.08	上午	抵達美國環保署總部，由美國環保署國際及種族事務部台灣計畫經理（Taiwan Program Manager, Office of International & Tribal Affairs, USEPA）Mr. Justin j. Harris 及確保執行與守法處聯邦活動政策分析辦公室助理主任（Associate Director for Policy Analysis Office of Federal Activities, Office of Enforcement and Compliance Assurance, USEPA）Mrs. Cheryl E. Wasserman 負責接待，隨即在 OECA 由 Mrs. Wasserman 介紹美國 NEPA 的概觀。
	下午	在 OECA 由美國環保署資訊服務分處網路地理影像專家（Internet Geoservices Specialist, Information Services Branch）Ms. Julie K. Kocher 及科學應用國際公司之地理資訊系負責人（GIS Lead, Science Applications International Corporation. X. Vincent Zhuang, Ph.D.）簡報 NEPAssist 的功能及操作。此次簡報為本次考察的主題，簡報中與 Ms. Julie 及 Mrs. Wasserman 就該系統功能及本署目前合作建置 GIS 系統交換意見。 另陪同本署法規會考察領隊王參事承姬及楊薦任科員宗翰（律師）與美國環保署總顧問室幕僚律師（Staff Attorney, Office of General Counsel, USEPA）Mrs. Marilyn J. Kuray 就「NEPA 與公民訴訟」主題進行研討。
99.11.09	上午	陪同本署法規會考察同仁拜訪美國司法部環境與自然資源組自然資源處助理處長（Assistant Chief, Natural Resources Section, Environment and Natural Resources Division, USDOJ）Mrs. Cynthia S. Huber 律師並聽取 Mrs. Huber 就美國司法部處理環保署與州政府間或與民間之訴訟事務簡報及討論。上午 11 時回到美國環保署總部與大氣執行處律師（Attorney, Air Enforcement Division, USEPA）Mr. Charles Garlow 就美國環境法令與空污訴訟事件進行討論。
	中午	由 Mr. Justin j. Harris（Taiwan Program Manager, OITA, USEPA）接待共進午餐。
	下午	Mrs. Cheryl E. Wasserman 再度案排 NEPA 相關簡報及討論以 NEPAssist 為工具處理審查開發案件個案案例。
99.11.10	上午	陪同本署法規會考察同仁聽取美國環保署衝突避免及解決中心資深衝突解決專家（Senior Conflict Resolution Specialist, Conflict Prevention and Resolution Center, USEPA）Mrs. Deborah S. Dalton 簡報，就該中心處理化解

環境問題爭端，避免訴訟之相關業務工作進行瞭解，雖然每年辦理案件不多，但美國環保署對於處理環境問題細節用心，值得我國學習。

下午　由 Mrs. Cheryl E. Wasserman 安排陪同本署法規會考察同仁拜會美國非政府組織單位（NGO）環境法律協會（Environmental Law・Institute），由該協會資深律師－國際計畫部門共同主任（Senior Attorney, Co-Director, International Programs）Mr. Carl Bruch 接待，並就該協會經營業務模式，接辦美國公民訴訟案件，與美國環保署之競合關係進行瞭解與討論，因美國國情及法制皆與我國不同，該協會經營理念，光以出版環境法令書籍及雜誌，營運即可損益平衡，Mr. Bruch 並振示對我國 NGO 發展情形及可能合作機會表示興趣。

99.11.11　美國退伍軍人紀念日（美國聯邦政府假日），參訪美國越戰、韓戰紀念公園及阿靈頓國家公墓。

99.11.12　出國考察資料彙整暨出國報告研討。

99.11.13　整理相關資料（參訪照片如附錄一）。

99.11.14　上午　搭機離美。

99.11.15　晚上　國際換日，抵達台灣。

DAY 1 Monday, November 8	Time	Group	Topic	Presenters/seminar leaders
Room 7216	9:00 am	OFA	Overview of NEPA, citizen suits	Cheryl Wasserman
	12:00 pm	LUNCH		
	1:00 pm	OFA/OEI	NEPAssist	Aimee Hessert/Julie Kocher/ Vincent Zhuang
	4:00 pm	OGC	NEPA and citizen suits	Marilyn Kuray
DAY 2 Tuesday, November 9				
Room 7208 (courtroom)	9:00 am	DOJ	Citizen Suits and NEPA	Cynthia Huber
	11:00 am	EPA	Citizen Suits and Environmental Law	Charlie Garlow
	12:30 pm	LUNCH		Justin Harris
DAY 3 Wednesday, November 10				
On Location	9:00 am	EPA/DOI	Conflict resolution for citizen suits	Debbie Dalton
	11:00 am	EPA	SEMINAR with TAIWAN on EIA and Enforcement	Taiwan delegation/ Wasserman
	12:00 pm	LUNCH		
	2:00 pm	ELI 2000 L Suite 620	Citizen Suits and Environmental Law	Carl Bruch/J Jay Pendergrass
	3:30 pm	NRDC/NWF	Citizen suits	

Schedule of US OECA

二、主要內容概要：

（一）**NEPAssist** 是什麼？：

　　NEPAssist 作業系統是具備自動操作及透過網際網路功能一套地理資訊統（Geographic Information System）工具，能收集及定位整理國家環境政策法案委任授權進行下環境審查程序的資訊。此系統是一種具有提供快速搜尋、定位、解析度高、圖層資訊豐富、計算分析能力的電子影像資訊服務系統。

（二）**NEPAssist** 系統功能及目的：

　　NEPAssist 作業系統在搜尋地理空間資訊容易方便，具有計算鎖定特定面積大小，及其區位內社會背景資料如人口數、河川數、空氣基本指標、學校、醫院、水庫等數據，不但可提供該電子影像外，其歷史影像及環境資訊整合資料庫，能以線上就開發計畫、規模、區位及影響評估能力等建立即時環評追蹤監督能力，並提供環境影響評估審查篩選（Screening）參考。

　　此作業系統是為聯邦政府、州政府及地方單位辦理相關的環境影響說明書（Environmental Impact Statements）及環境評估書（Environmental assessments）審查所發展而成（如附錄二）。

（三）**NEPAssist** 的特色：

　　1、系統使用者能夠直接將網路上數位空照影像中特徵數位化。

　　2、依據政策施為的決定規則也能夠以自動操作及透過網際網路功能產生。

（四）**NEPAssist** 使用操作說明：
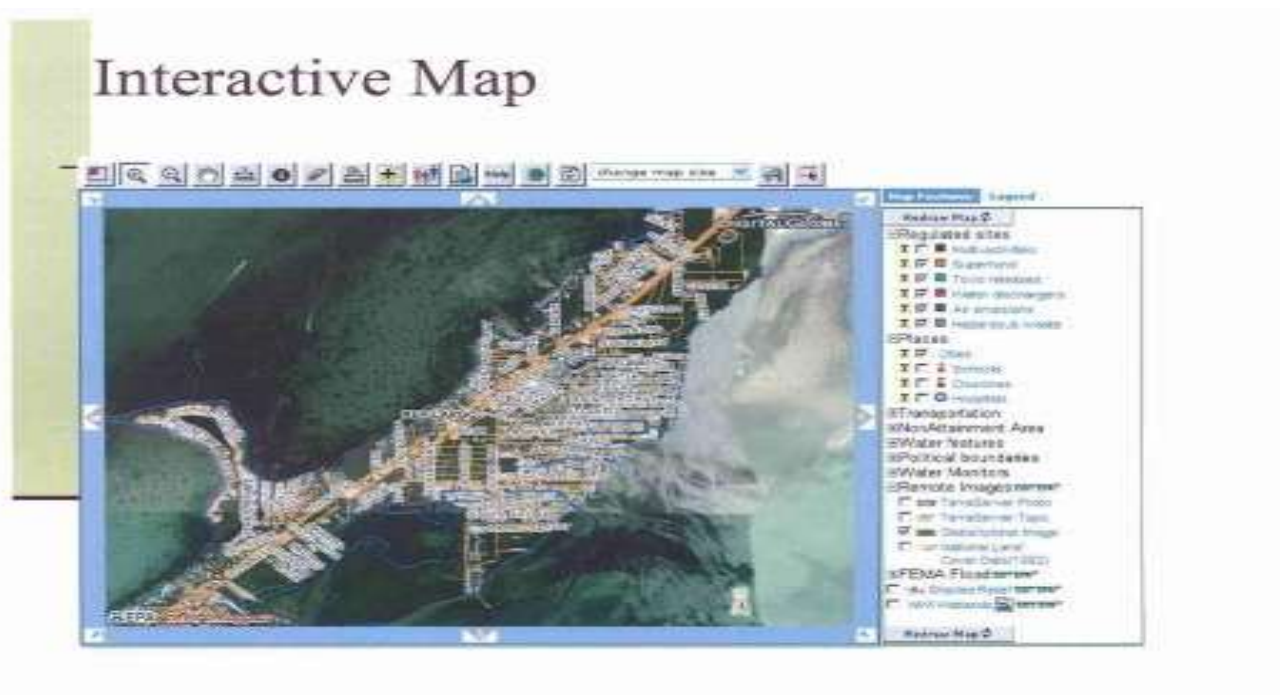
　　1、本系統網路網頁需要帳號及密碼，在鍵入正確帳號及密碼後即可進入用。
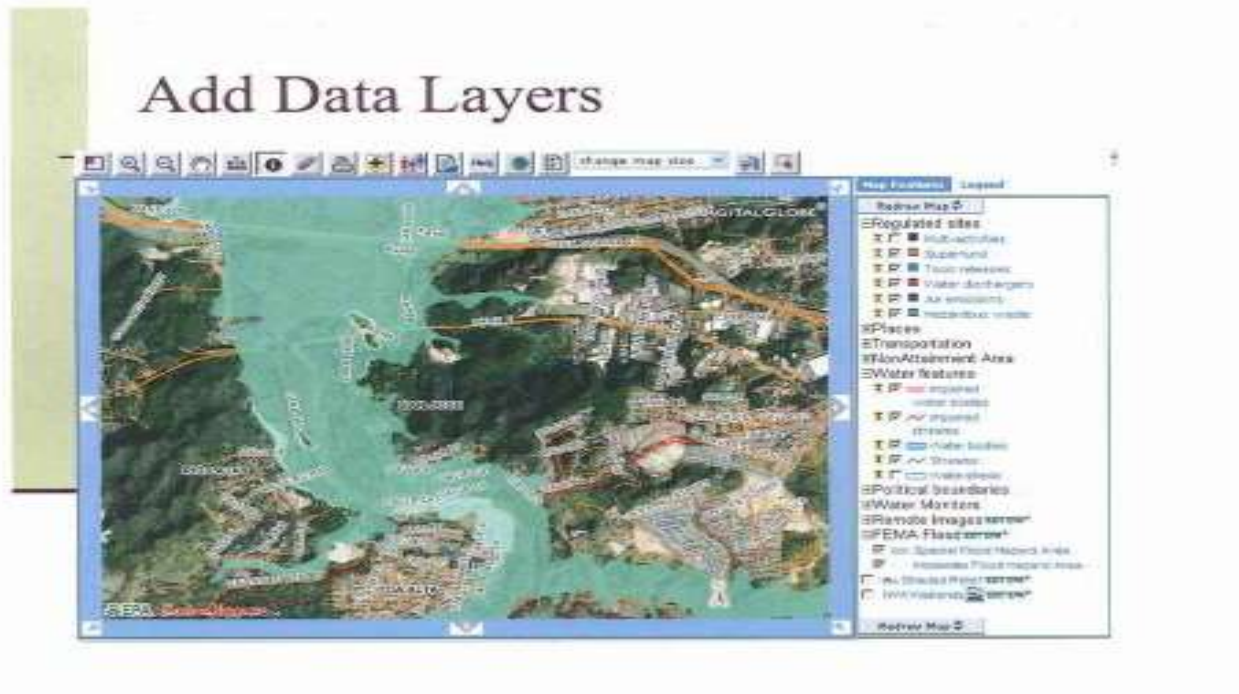
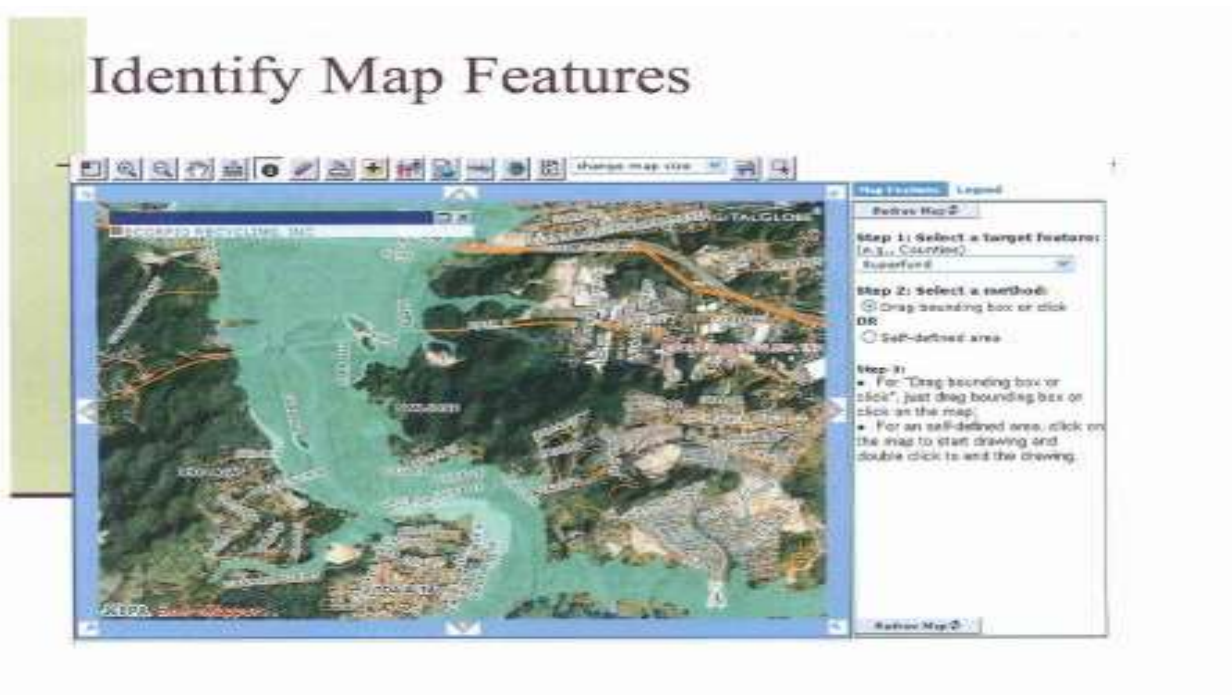2、選擇調查區域：在本頁中以美國為例，可以由州別、城市、地址，或機場，或水文單位碼，或經度及緯度中選擇一個地形圖，以縮小研究調查的區域。
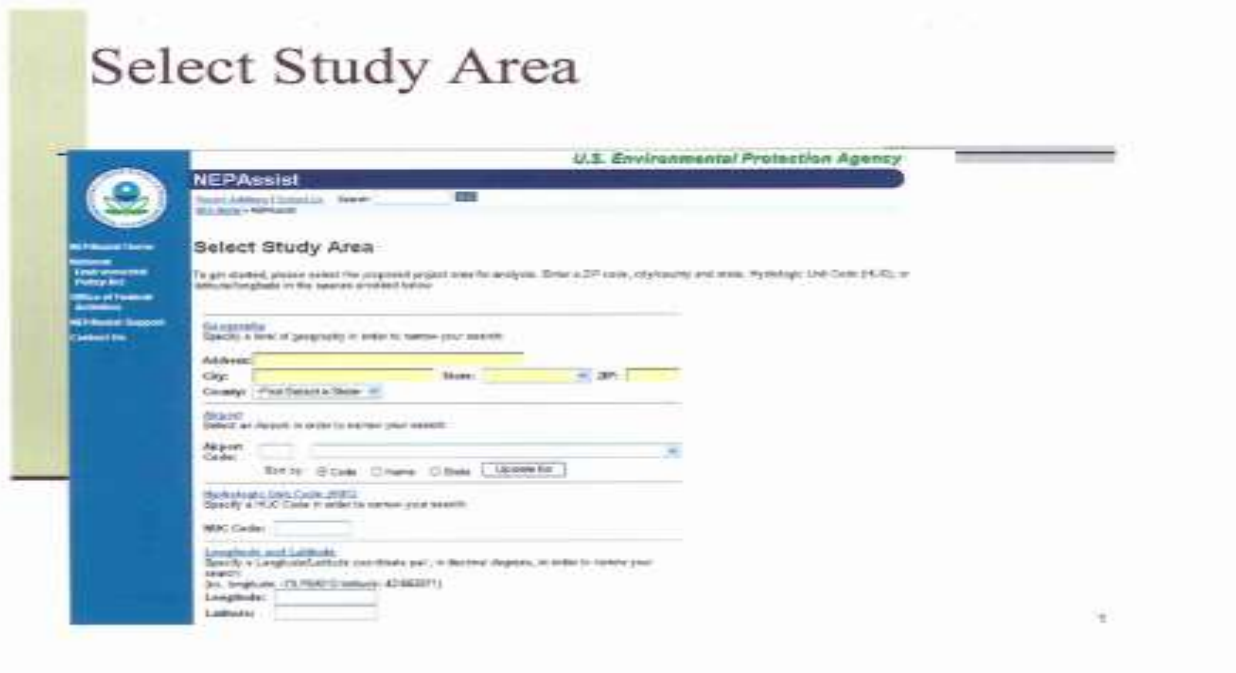
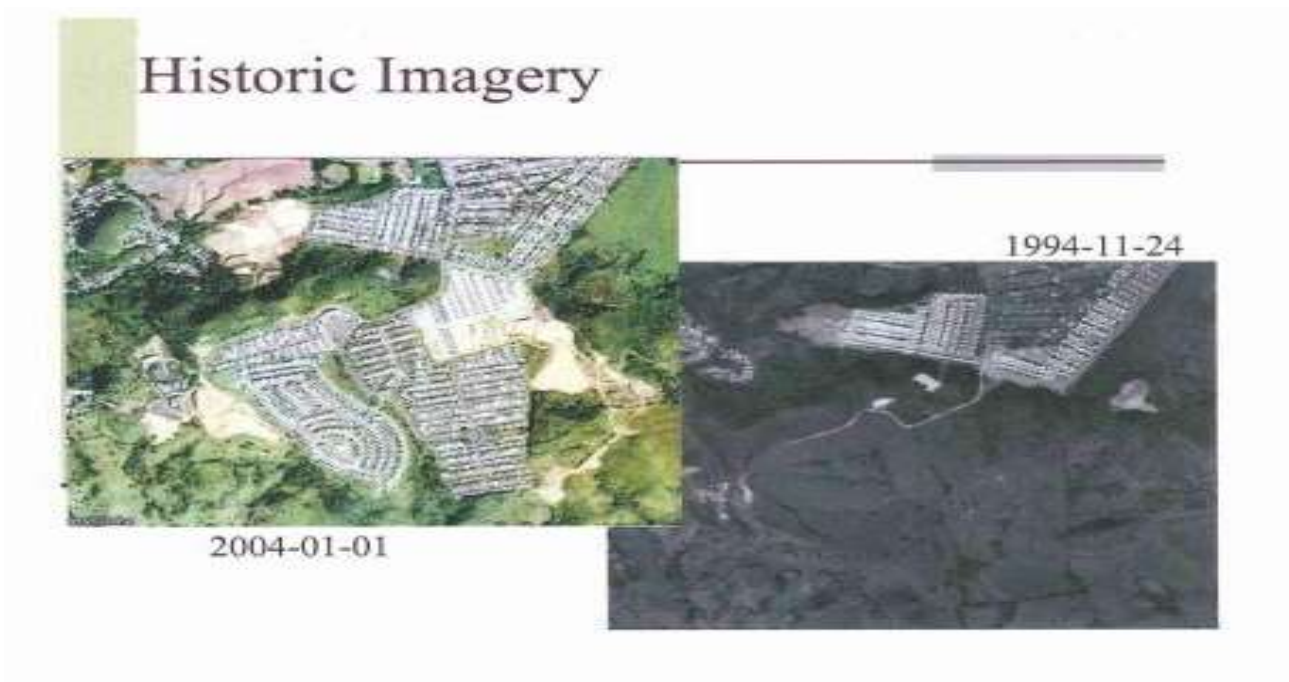3、互動式的地圖：可查詢管制區域（如空污排放區、毒性物質棄置區、危害性廢棄物區、水質指標等）、城市及位置（學校、教堂、醫院）數量、交通道路、未達某污染值區域、水質監測站及遙測影像等資料。

4、加入數據圖層：在第 3 點互動式圖中，可再進一步查詢圖層，如水質指管制區域（如受污染水體、受污染河川、河川位置及數量、水庫等）、亦可查詢易患水災危險區域、中城水災危險區域等。
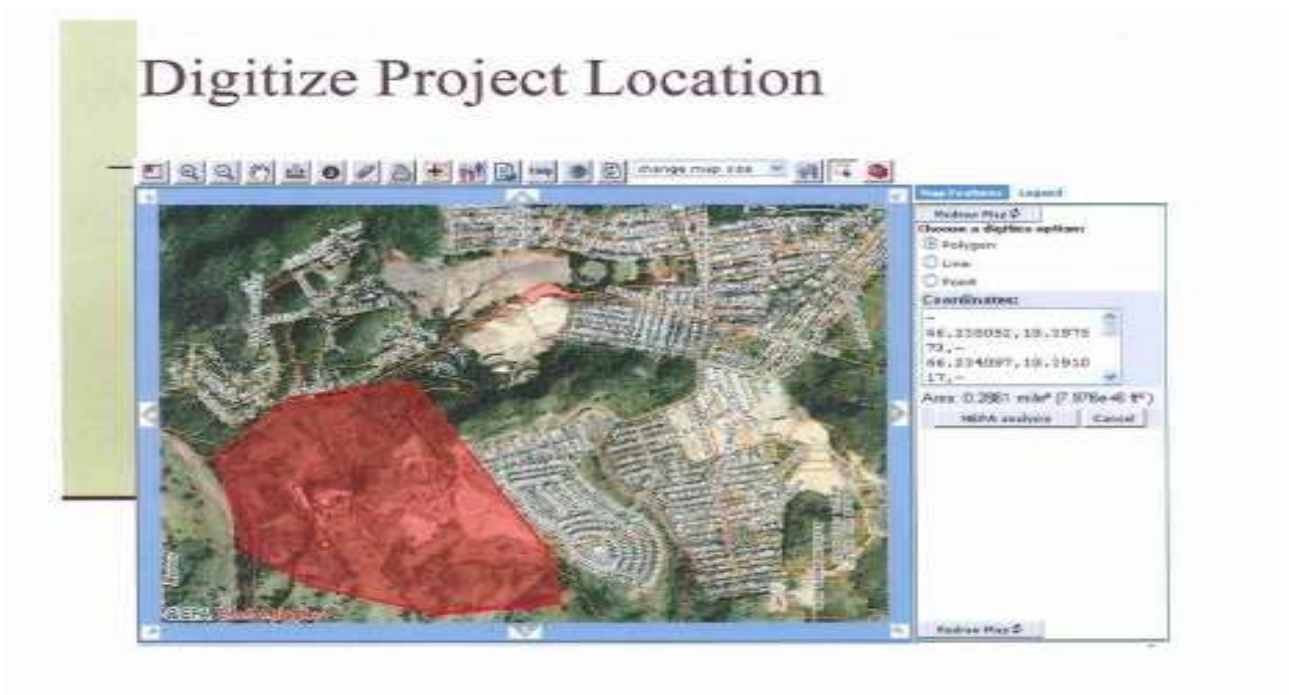

Add Data Layers

5、確認圖資特徵：選查調查研究主題，如選擇超級基金（Superfund）區域選項，或在圖上拖曳選擇範圍區塊等。

Identify Map Features

6、歷史影像：可在圖資中查詢歷史影像，對比開發區域的變化軌跡、地形變化及環境基本資料變化情形。

7、開發計畫區域數位化：可用多邊形、點、線或全球定位座標系統（GPS）處理定出計畫位址、計畫面積。

8、可查詢環保署區處詳細報告：在選定位置可比對不同區處的基本環境資料，如任意選定位置之 400 公尺內的學校、醫院數量及位置。未達污染值區域查詢如 400 公尺內未達硫氧化物污染情形、400 公尺內未達臭氧污染情形等。

9、數據中反查詢圖資名稱距離：在選定位置可比對不同區處的基本環境資料，如任意選定位置之 400 公尺內的學校為何？未達臭氧污染值的區域名稱及距離。

（五）**NEPAssist 系統優點：**

1、 使用 NEPAssist 作業系統可減少 75%的審查範籌界定的公告及開發計畫時間。

2、 使用 NEPAssist 作業系統可減少至少需要準備 4 週以上時間。

3、 在開發計畫早期階段可以找出重要的環境爭論。

4、 與其他行政部門加強國家環境政策法案文件審查的合作。

5、 提供方便使用區處所獨有的地理資訊。

參、 心得與建議

本次考察主題為美國 NEPAssist 作業系統暨地理資訊系統（GIS）應用於環評監督業務的發展，考察重點主要分為三大項：包括一、「美國發展 NEPAssist 作業系統的歷程」，二、「NEPAssist 作業系統功能及運用於環評監督之效益」，三、「NEPAssist 技術引進台灣的可行性」，茲分別說明如下：

一、美國發展 **NEPAssist** 作業系統的歷程：

NEPAssist 發展源自美國環保署第 2 區（Region 2-新紐澤西州、紐約州及波多黎各等地）以網路連結為環境審查工具的最初模型，經由美國環保署環境資訊辦公室（The Office of Environmental Information）、聯邦事務辦公室（The Office of Federal Activities）、其他區處（Regions）及外部合作單位的協助合作產生，目前已佈署備置於的所有美國環保署區處，透過網路已為全美國性的版本。以 Region 10 而言，自 2005 年開始使用此作業系統，最初版本是與 Region 8 共享環境資訊，現行版本為第二版，供西北部的三個州使用，再加入阿拉斯加的獨自版本，藉由 Region 10 的環評辦公室、生態辦公室及部落與公共事務部等合作發展而成。NEPAssist 系統可以說是一個創新的工具，能加快促進環境審查程序和幫助開發行為規劃時納入相關環境資訊的考量。基於網路的應用程序汲取各區處地理資訊系統資料庫的動態環境資料，並提供即時的環境評估指標篩選供設定用戶區域的關注。這些特性有助於簡化審查程序，在開發行為的最早階段提出一些潛在的重要環境問題。

二、NEPAssist 作業系統功能及運用於環評監督之效益：

NEPAssist 顧名思義，是對美國國家環境保護法 NEPA（National Environmental Protection Act）有所助益，亦即對聯邦中央政府各機關所涉之許可、同意、參加及財務支援之活動，皆需依 NEPA 進行環境評估。而開發行為的評估審查有一定的期程，加入公眾參與意見及處理，容易耗費時日，如有 NEPAssist 的協助及提供開發區域基本環境資訊，將有助於純化環境影響說明書及環境評估書審查（Process for Review of EIAs and EAs），容易取得核心地理資訊，對於選擇開發區域的開發行為的環境指標可做篩選，最重要的是提昇審查過程之效率。

此作業系統係以網路界面的地理資訊系統服務工具，無需特別的訓練，無需使用執照，也不需要桌上型電腦配備組態或資料數據，透過網路服務提供地理空間的資訊使用，方便取得延續性的資料。以目前我國環評監督而言，應用此系統對通過審查環評個案之開發歷時地理空間資訊數據加以管理，如基地之環境區位變化、環境地形改變等資訊能即時監控，提升我國執行環評監督之執行效益，並可建立開發地點歷史影像及環境資訊整合資料庫，不論對於環評審查之時效助益或是開發案件後續監督的參據，都是一項利器。

三、NEPAssist 技術引進台灣的可行性：

在本次出國考察計畫前，曾對台灣若干 GIS 系統進行瞭解，包括行政單位、Google Earth、Microsoft Bing 之空照地圖等進行比較，行政機關單位 GIS 系統或許發展較早，惟其目的及使用標的不同，區位圖層資料亦各有所偏好，部分重要開發單位的位址圖資亦付之闕如；而供免費使用的網際網路 Google Eeath 部分圖資較舊，亦無定期更新，亦無法滿足環評監督使用，由於本署 GIS 系統亦在起步階段，雖有初步發展成果，惟仍須依賴 ArcGIS 系統進行存取圖資轉檔，方便性仍有努力空間，目前國內已有線上影像服務公司誕生，惟使用上功能性、方便性仍不及 NEPAssist 系統，故出國前已就 NEPAssist 技術引進台灣的可行性的結果，進行預擬採取對策：

（一）如本次赴美考察該系統符合本署需求：
  1、美方同意無償轉移 NEPAssist 作業系統供本署使用，無技術上的問題，後續將由本署研擬後續具體計畫，爭取預算辦理。
  2、如美方不同意移轉，則本署將參考美方系統功能設計研議納入本署未來環資部環境資訊整合計畫中研究設置。
（二）、如本次考察仍無法確定該系統符合本署需求，或我方是否具自行發展的能力存有疑慮，則將於 101 年爭取預算研議邀請美方專家於台灣舉行研討會與我國專家學者共同探討台灣發展的必要性及可行性。
（三）、本次赴美考察後，如該系統不符本署需求，則後續不再繼續合作。

考察心得：

本次赴美考察係以開發地點歷史影像及環境資訊整合資料庫，能以線上就開發計畫、規模、區位及影響評估能力等建立即時環評追蹤監督能力。透過此次考察美國發展 NEPAssist 作業系統現況及使用情形，初步認為該系統功能及未來發展性可符合目前台灣環評監督及審查使用需求。對通過審查環評個案之開發歷時資訊管理，如開發位址之環境區位變化、環境地形改變等資訊能即時監控，提升我國執行環評監督之執行效益。

此次考察經洽詢美方得知美國環保署在中美洲貿易協定下與該協定之中美洲國家如多明尼加、尼加拉瓜、薩爾瓦多等國家簽定佈設共享 NEPAssist 協議範例資料（如附錄三），本次報告亦將該協議概略翻譯如下：

環境影響評估

NEPAssist 共享國際贊助協議書（夥伴國資訊）

NEPAssist 是應用地理資訊系統為工具，所發展出可支援即時使用、整合及分析資訊，以提供環境影響評估審查及準備措施的作業系統。

美國環保署與他國佈設 NEPAssist 環境影響評估分析工具措施（供夥伴國家資訊）

本套裝資訊計畫係為與美國環保署共同參與國際環境合作計畫的國際夥伴國所籌備，並與美國環保署共享下之非屬專有財產的 NEPAssist 系統，此系統已發展超過 8 年時間能協助環境影響評估文件審查及發展，並可加速數據資料的查詢，應用地理資訊系統支援網路使用提供環境影響評估篩選（Environmental Impact Assessment Screening）。

◎ 供網路使用的 GIS 工具：使用國際通 GIS 軟體及伺服器所需，不適用個人電腦及資料儲存。
◎ 非屬專有財產權（Non-Proprietary）：使用非市售軟體或硬體，所以使用不需許可授權，亦不需個人電腦組態
◎ 使用方便：不用受訓、手冊使用簡單、標準通用圖像、方便運用在變化快速的開發樣態。
◎ 可即時使用基本的環境及社政的資料庫
◎ 分散性地理空間應用：透過網路共用服務（Web Services）數據資料沒有所有權、支配權或處理上的問題
◎ 特殊性的資料庫的保護設有密碼管理
◎ 整合及分析資訊：具視覺性及分析功能
◎ 協助審查及開發具有效率及單純化
◎ 圖像提供了使用者的標準規格化到任意探索之間平衡點
佈設 NEPAssist 系統可分為四個階段，如下表
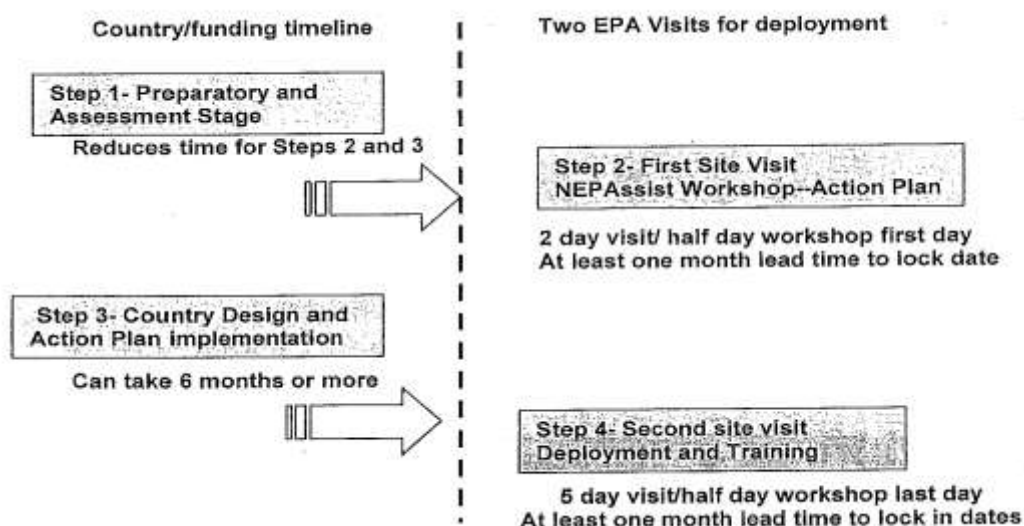
第一階段為準備及評估期(附件 1、2、3)

◎系統及軟體功能性的自我評估：
※ 確認與合作國原有系統可能差距及軟體最低需求。
※ 確認 GIS 圖資層：環境影響評估備用及審查之可使用工作清單有 42 個圖資層、如保護區圖、敏感區位圖（紅樹林區位圖、濕地區位圖…等）

※ 審視圖資清單，依環評審查委員所需增加及標記重要圖資。
※ 確認各單位所集有、維護及/或可提供使用的公開資訊。

◎開始規劃處理
※ 設計供國家運用的介面網頁：夥伴國共同設計自己國家擁有的網頁，並即命名自己國家所佈設的系統。本協議的附件 3，提供的是其他夥伴國家將美國環保署的 NEPAssist 重新設計的的範例，這也是第一次訪談前沒有理由在不立即開始設計的原因，美國環保署可提供夥伴國每一環評審時篩選細目的列印資料或必要的翻譯。
※ 確認並準備系統將納入的圖檔及資料庫

第二階段： 第 1 次訪問： NEPAssist 研討會及行動計畫的開發（附件 4、5）
※ 準備第一次訪問及 NEPAssist 研討會
    ＊ 在第二階段中應準備邀請相關主要機關及 NEPAssist 研討會的人選清單，及聯絡電子郵邸件帳號及聯絡電話等，該機關人選清單中含共享圖資人員及提供存取圖資的授權專業人員會有效益。
    ＊ 安排與美國環保署人員的訪問時間、地點及翻譯
    ＊ 完成邀請，確定由誰簽署，部（署）長？或副部(署)長？環評部門主管？<u>中美洲貿易協定多明尼加（CAFTA DR）焦點（完成邀請清單人員，由負責一種或多種必需圖資層的環評審查幕僚、地理資訊系統幕僚及學術界人士及其他部會及政府層級）</u>
    ＊ 適時翻譯 Power point 講演及發送書面資料
    ＊ 可在會議開始時安排部長與會，並於第 2 天結束時討論行動計畫
    ＊ 按排 GIS 幕僚人員於第 1 天下午及第 2 天上午與下午前段與會或出席
※ 行動計畫發之展與共識
    美國環保署將與國家工作幕僚或主管起草行動計畫

第三階段　實施行動計畫
※ 夥伴國辦理行動計畫之軟、硬體差距填補作業
※ 夥伴國確認現有地理空間性圖資(如圖型檔、或地理資料庫檔及網路使用性)之數據圖層，並建立一套開發策略與提供使用圖資數據之其他單位展開相關協議。
※ 請以（1)系統界面設計、（2）確定含適用本系統版本工具的圖層、（3）建議以具有形圖檔（shapefiles）或地理資料庫檔（file-based geodatabases），註記之 MXD 檔及大型檔案（metadata）等以電子檔格式寄送美國環保署，以俾確認可供佈設。
※ 如有需要，請翻譯訓練教材。
※ 行動計畫施行完成可立即準備佈設訪問，留一個月時間供美國環保署安排後續訪問，確認指派 GIS 人員參與，人員清單以及訓練與展示日期確定後寄出邀請函。

第四階段　佈設與訓練（附件 6）

約五天的訓練訪問

※ 訓練課程確定日期後安排 EIA 審查人員及 GIS 人員參與。

※ 安排 GIS 人員參與為期四天的佈設解說

協議附件：

1、NEPAssist 系統規格

2、資料圖層範例

3、2 天訪問議程範例

4、NEPAssist 系統研討會邀請函（以中美洲貿易協定國多明尼加為例）

5、網路設計與解析問題範例

6、5 天訪問議程範例

7、其他工具資料：Power Point 講說、如何加入圖層指南、資料圖層登錄及使用者手冊指南

建議事項：

一、NEPAssist 是美國環保署以網路應用聯結、加密系統及數位資料(電子地圖、衛星影像)為主軸的地理資訊系統（GIS），供該署各區處使用的網路服務平台，在美國已發展八年以上，在空間數位內容的擷取、管理、計算分析及展現技術，輔以社會資訊圖層，提供整合多元環境資料，開發建置銜接多元介面，可提供較新、使用非常方便的高解析電子地圖影像功能，除在美國本土外，已推廣至中、南美洲數個國家建置該系統，目前本署監資處亦積極在發展類似的系統平台，已有相當之成果，不論是在資料建置、系統開發上，其成效已是有目共睹。但後續資料維護不易、與政府間行政單位的「Domain Know How」橫向資訊取得可能較難緊密結合。未來政府組織再造成立環境資源部的架構下，或許可以解決部分橫向結合資訊資源的問題，惟建立以網路聯結、共享空間影像數位內容的擷取、管理、計算分析及展現，操作簡易快速特性的台灣基本環境地理資訊系統，實有其必要性。因此像美國 NEPAssist 系統所提供的功能如能運用於後續環評稽查監督業務工作上，除可提高執行效率外，對開發案件於環境影響評估審查階段中背景資料的查詢、篩選及效率上亦有助益。因此建議應與美國環保署加強聯繫合作，並研究與美國簽署共享 NEPAssist 系統之國際贊助協議的可能性。

二、NEPAssist 地理資訊系統美國環保署已發展多年，在空間影像的搜尋、地理環境基本資料圖資、環境社經基本資料庫的整合、配置及使用上等技術、經驗皆可供我方學習與借鏡，美國環保署近年並與尼加拉瓜、薩爾瓦多等多國合作發展，由美方提供經驗與技術，協助發展屬於合作夥伴國的地理資訊系統，因此為建置一套功能與 NEPAssist 相仿並專屬我國的環境資源地理資訊系統，實有其需求性，建議本署監資處及相關處室，以現有已發展的 GIS 作業系統基礎與我方可配合的研發條件的條件下，規劃與美國環保署洽談雙方地理資訊系統的技術合作及研討後續發展計畫。

拜訪美國環保署總部

拜會美國確保執行與守法處（OECA）與聯邦活動政策分析辦公室助理主任
Mrs. Wasserman 研討交流

與美國環保署資訊服務分處（ISB USEPA）網路地理影像專家 Ms. Kocher 及科學應用國際公司之地理資訊系負責人（SAIC）Dr. Zhung 研討交流

與美國環保署總顧問室幕僚律師（OGC, USEPA）Mrs. Kuray 研討交流

拜訪美國司法部環境與自然資源組（ NRS, USDOJ）

拜訪美國司法部環境與自然資源組資源處與助理處長（NRS, EANR, USDOJ）Mrs. Huber
律師研討交流

與美國環保署總部大氣執行處律師（AED, USEPA）Mr. Garlow 研討交流

與美國環保署衝突避免及解決中心資深衝突解決官員（CPARC, USEPA）Mrs.Dalton
研討交流

環境法律協會（ELI, NGO）國際計畫部門共同主任 Mr. Bruch 研討交流

美國環保署實習法庭一隅
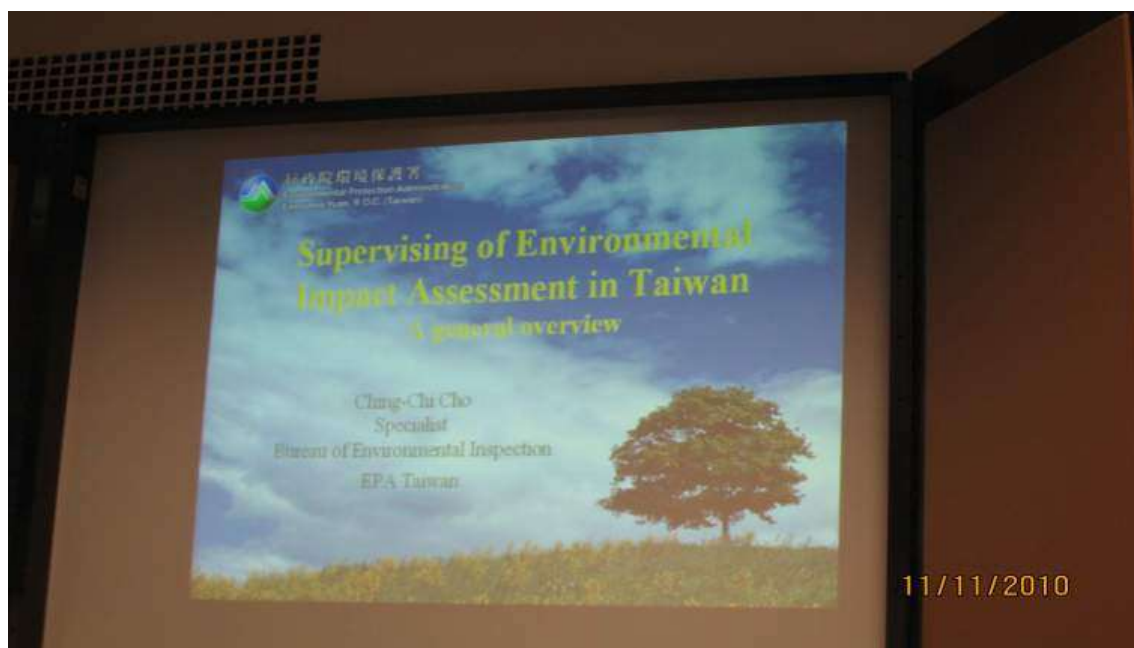
本署環境督察總隊環評監督現況簡報資料
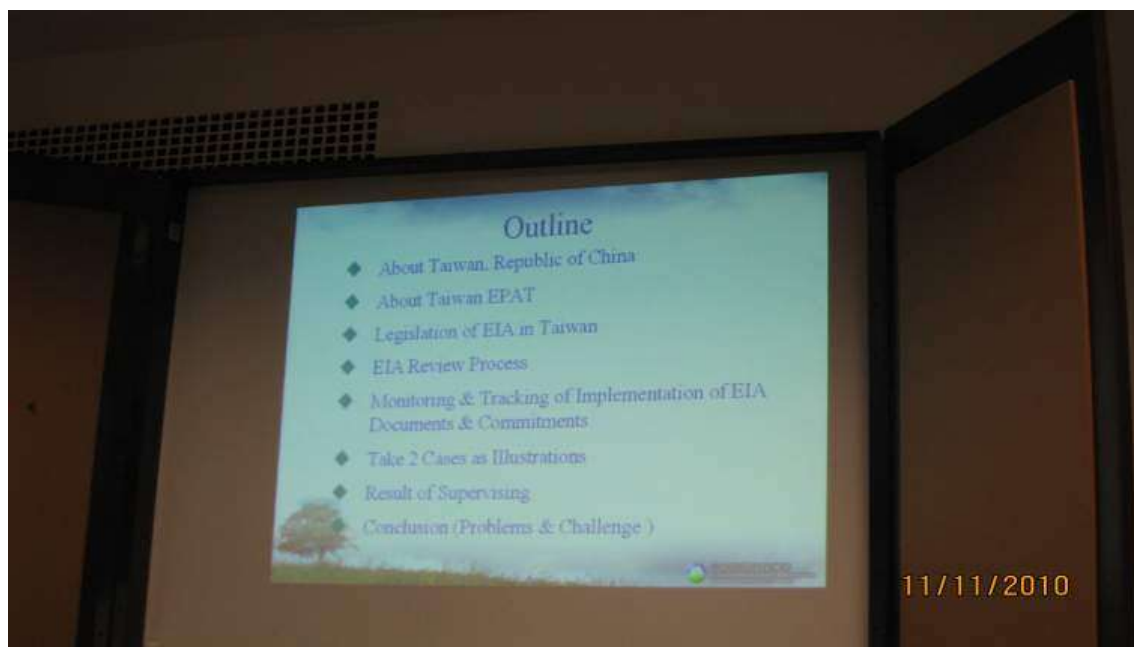
本署環境督察總隊環評監督現況簡報資料

參觀美國退伍軍人節越戰紀念公園活動情形

參觀韓戰紀念公園

NEPAssist:
A Web-Based Mapping Application for
Environmental Review and Assessments

Presented by
Julie Kocher, EPA
Office of Environmental Information
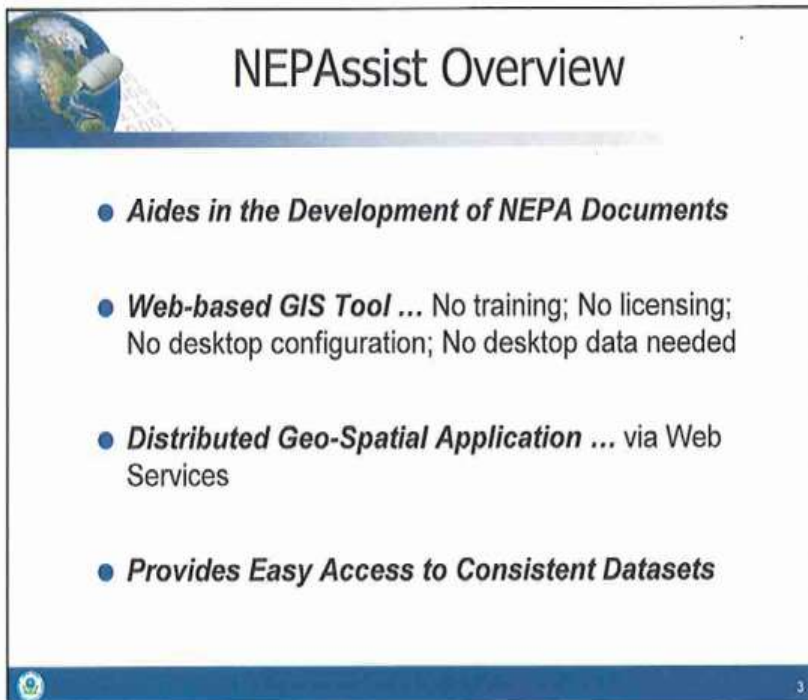
Why Was NEPAssist Developed?

- **NEPA – National Environmental Policy Act**

- **Simplify the Process for Review of EISs and EAs**

- **Access to Core Geo-Data**

- **Environmental Screening of all Proposed Projects**

- **Streamlined Review Process**

1
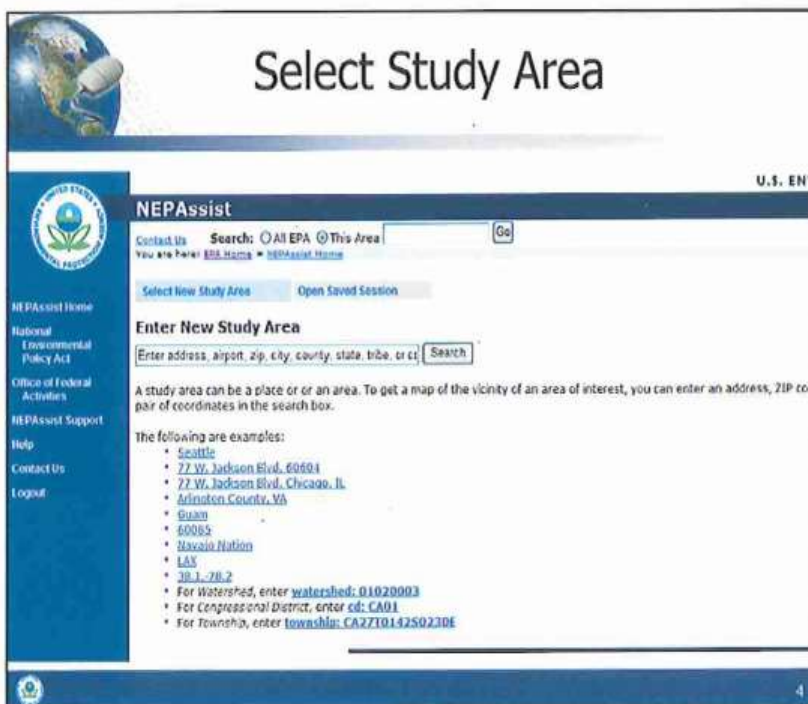
NEPAssist Overview

- **Aides in the Development of NEPA Documents**

- **Web-based GIS Tool ...** No training; No licensing; No desktop configuration; No desktop data needed

- **Distributed Geo-Spatial Application ...** via Web Services

- **Provides Easy Access to Consistent Datasets**

3

Select Study Area

U.S. ENV

NEPAssist

Contact Us   Search: ○ All EPA ⊙ This Area [   ] [Go]
You are here: ERA Home ► NEPAssist Home

Select New Study Area   Open Saved Session

NEPAssist Home

National Environmental Policy Act

Office of Federal Activities

NEPAssist Support

Help

Contact Us

Logout

Enter New Study Area

[Enter address, airport, zip, city, county, state, tribe, or c] [Search]

A study area can be a place or or an area. To get a map of the vicinity of an area of interest, you can enter an address, ZIP coc pair of coordinates in the search box.

The following are examples:
- Seattle
- 77 W. Jackson Blvd. 60604
- 77 W. Jackson Blvd. Chicago, IL
- Arlington County, VA
- Guam
- 60085
- Navajo Nation
- LAX
- 38.1,-78.2
- For Watershed, enter watershed: 01020003
- For Congressional District, enter cd: CA01
- For Township, enter township: CA27T0142S023DE

4

Interactive Map

Add Data Layers

Historic Imagery

February 1, 2004

February 1, 2003

Digitize Project Location

4

EPA Region Specific Reports

Region 2

EJ areas within 300 meters?	Yes
Within 200 meters of nonattainment area for SO2?	No
Within 400 meters of a wetland protected under section 404 of the Clean Water Act?	Yes
Within an area that exceeds the median risk indicator amount for the state as determined by the Toxic Risk Inventory Screening Tool?	Yes
Within an area that exceeds the median risk indicator amount for the state as determined by the National-Scale Air Toxics Assessment?	Yes
Within State and Local Parks?	No
Within 400 meters of a Wild and Scenic River?	No
Within 400 meters of a 303(d) listed reaches?	Yes
Within Fish and Wildlife Service Refuge?	No
Within National Forest?	No
Within 400 meters of Coral Reefs?	No

Region 4

Sites
- Within 400 meters of a school?
- Within 400 meters of a hospital?
- Within 400 meters of a port?

Nonattainment
- Within 400 meters of a SOx nonattainment area?
- Within 400 meters of a lead nonattainment area?
- Within 400 meters of a CO nonattainment area?
- Within 400 meters of an ozone nonattainment area?

EcoSystem
- Within 400 meters of an area of level 4 ecoregions?
- Within 400 meters of a designated sole source aquifer?
- Within 400 meters of a designated priority watershed?
- Within 400 meters of a major river?
- Within 400 meters of a designated 100-year FEMA floodplain?
- Within 400 meters of a National, State, or Local forest or park?
- Within 400 meters of a National wildlife refuge?
- Within 400 meters of a managed land/conservation area?
- Within 400 meters of a wild and scenic river?

11

NEPAssist Benefits

- *Reduces Time to Review Scoping Notices and Projects by 75%*

- *Reduces Time Needed to Prepare EAs by as Much as 4 Weeks*

- *Raises Important Environmental Issues at the Earlier Stages of Project Development*

- *Enhances Collaboration with Other Agencies for the Review of NEPA Documents*

- *Provides Easy Access to Region Specific Geo-Data*

12
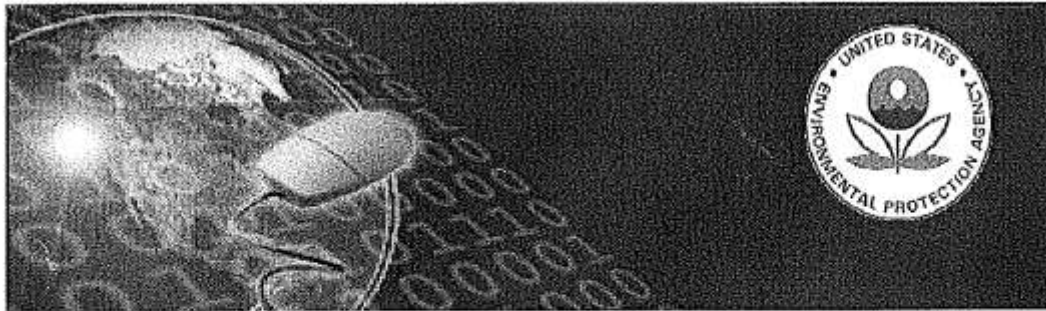
Environmental Impact Assessment (EIA)

International Capacity Building Protocol for sharing NEPAssist*

Information for Partner Countries

* NEPAssist is a GIS-Based tool developed to support instant access, integration and analysis of information to support EIA review and preparation

Deployment of U.S. EPA's NEPAssist Environmental Impact Assessment (EIA) Analytical Tool with other countries

Information for Partner Countries

This information package is prepared for U.S. EPA's international partners who may be part of an international program of environmental cooperation under which EPA will be sharing its non-proprietary NEPAssist tool, a GIS-based, web accessible tool for Environmental Impact Assessment Screening that EPA developed over an 8 year period to assist with the development and review of EIA Documents and hasten response to data inquiries.

- **Web-based GIS Tool ... with standard GIS software and server capacity it needs** No desktop application, no desktop data storage
- **Non-Proprietary—uses off the shelf software/hardware so** No licensing; No desktop configuration
- **User friendly:** No training, simple manual, standard icons, flexibility to manipulate on the fly changing constraints/scenarios
- **Immediate Access to core environmental and social datasets**
- **Distributed Geo-Spatial Application ...** via Web Services so there is no problem with data ownership/control/management
- **Allows for password protection of specific datasets**
- **Integrates and analyzes information: visually and analytically**
- **Helps to streamline and simplify review and development**
- **Features provide a balance between standardization with user freedom to explore**

Country/funding timeline | Two EPA Visits for deployment

Step 1- Preparatory and Assessment Stage

Reduces time for Steps 2 and 3

Step 2- First Site Visit NEPAssist Workshop--Action Plan

2 day visit/ half day workshop first day
At least one month lead time to lock date

Step 3- Country Design and Action Plan implementation

Can take 6 months or more

Step 4- Second site visit Deployment and Training

5 day visit/half day workshop last day
At least one month lead time to lock in dates

STEP 1:   Preparatory and Assessment Stage

Attachment 1: NEPAssist system requirements.
Attachment 2: Example data layers
Attachment 3: Example designs for
- o   application of NEPAssist and
- o   analytical questions for yes-no questions for which data is available.

1   Self Assessment of system and software capabilities

1.1.1   Identify potential gaps in meeting system and software minimum requirements. List what is currently available and where the gaps are.   Discuss with EPA whether there are alternatives but it is advisable to start the process now to fill in any gaps.

1.1.2   Identifying data layers;
Attachment 2 is a working list of 42 data layers that might be useful in EIA preparation and review.   There are others of course which you are free to add to the list, such as geospatial information about other mending EIA project reviews or types of permitted projects.

1.1.3   Review the list of data layers, add to it as appropriate and indicate those most important for EIA review staff

1.1.4   Identify institutions that collect, maintain and/or provide access to that information on the table.

1.2   Beginning the design process

1.2.1   Designing the interface page for country's application:
Country partners design their own web page and name the system for once it is deployed in their country. Attachment 3 provides examples of how the EPA NEPAssist web interface was redesigned by other countries. There is no reason why this design process cannot begin before the first visit. The design is for the first page, the interface page. EPA provides printouts of each of the Screens for review with the partner country and translation by them if necessary to do this.

1.2.2   Identify and prepare the shape files for databases that will be included in the system.

Step 2: First Visit: NEPAssist Workshop and Development of Action Plan.

Attachment 4: Model invitation
Attachment 5: Suggested program for the two day visit.

2.1 Preparing for first visit and NEPAssist Workshop

2.1.1 Prepare a list of persons to invite from the key institutions to the NEPAssist Workshop during Step 2, along with email addresses and phone numbers. It would be useful to include persons of authority over sharing the data and providing access to the data from those institutions.

2.1.2 Arrange for the date, with U.S. EPA, and then the location/interpreters (ELE)

2.1.3 Finalize invitation. . Decide who will sign, Minister? Vice Minister? EIA Director? CAFTA DR focal point?
Finalize the invitation list of persons from the EIA Review staff, GIS staff, academic institutions, other ministries and levels of government, those responsible for one or more of the desired datalayers. Consult with the CAFTA DR focal point.

2.1.4 Translate power point presentation and handouts as appropriate.

2.1.5 Arrange for meetings with Minister perhaps at opening, and then to discuss the Action plan at the close of the second day.

2.1.6 Arrange for presence/meetings with key GIS staff for afternoon of Day 1 and morning and early afternoon of Day 2.

2.2 Developing and Agreeing upon Action Plan

U.S.EPA will draft Action plan with Country staff/Directors

Step 3:   **Implementation of Action Plan**

3.1. Country fills in gaps identified in Action plan for hardware and software.

3.2 Country identifies data layers available with geospatial data—shape files, or file-based geosdatabases and web accessibility (not necessarily publically accessible that are not currently accessible but which could be made available via web) and develop a strategy for developing agreements with other institutions for data access.

3.3 Send to EPA in electronic form the: a) interface design, b) datalayers identified for inclusion in this version of the tool c) SUGGESTED: actual data files with shapefiles or file-based geodatabases, MXD file with symbology, and metadata if possible so EPA can verify it is ready for deployment

3.4 Translate training materials if necessary.

3.5 Prepare for Deployment visit once action plan is implemented. Leave one month for U.S. EPA to schedule follow up visit. Ensure GIS staff are committed, list and send invitations to workshop on final day of training and demonstration.

Step 4:	Deployment and Training

Attachment 6 is a sample program for the 5 day visit.

4.1   Arrange for EIA Review Staff and GIS staff to attend training session final day

4.2   Arrange for GIS staff member to be present for deployment of system for 4 days

Attachments:
  1- NEPAssist System Requirements
  2- Example Data Layers
  3- Example 2 day visit agenda
  4- Example invitation to NEPAssist Workshop
  5- Example Design of Web Interface and Analytical questions
  6- Example 5 day visit agenda
  7- Other materials:
    ■ Power point presentation
    ■ Guide: How to add layers
    ■ Guide: Registration of Data layers and User Guide

Attachment 1 *NEPAssist System requirements*

Specifications	NEPAssist Requirements
System Hardware	
CPU	2 or 4 cores
RAM	4 GB
Hard Disk Size	100 GB preferred or depends on the size of Shapefile repository
DVD ROM	Yes
USB Ports	Yes
On LAN	Yes
Web Server	Yes
HTTP/HTTPS	HTTP
Internet/Intranet	Internet
Ability to Create a Local Account	Yes
Right to Grant IUSER Write Permission	Yes
Database	
Microsoft SQL Server 2005 or 2008	2005 or 2008 If use SQL Server SDE
Separate Server	Preferred
If Yes, Specs	>2GB RAM and 100 GB disk space
On LAN	Yes and accessible from the GIS Server
Shapefiles	Yes (preferred on the GIS Server)
Size of EIS, GIS Staff	*1 minimum*
System Software	
Windows 2003 SP2 or Windows 2008	Yes
IIS 6.0 or IIS 7.0	Yes
.NET framework 2.0	Yes
.NET framework 3.0	Yes
ASP	Enabled
Visual Studio 2005 or 2008	2005 or 2008 if recompilation is necessary
Web Browser	Internet Explorer 6 or 7 or Firefox 3.x
ESRI Software	
- ArcGIS Server 9.3.1	Yes
- ArcSDE 9.3.1	*If DB is chosen; but also works with shapefiles*
ArcGIS Desktop 9.3.1	Yes
NEPAssist Application Disk Space - 20 MB	
Database Disk Space (Depends on size of Data Layers)	

Attachment 2   *List of example data layers*   *English*

COUNTRY				
List of GIS data layers for analysis and evaluation of projects EIA				
		Frequency of use in EIA analysis and evaluation	Scale (Eg:1:50,000 or better)	Data Quality (Metadata) (High-Low-Moderate)
Protected Areas				
Sensitive areas (mangroves, wetlands)				
Quarries and Aggregates				
Productive capacity of soils				
Climate				
Average annual precipitation				
Speed and prevailing wind direction				
Average Temperature				
Contour				
Basins and sub-basins				
Ecosystems (Unesco)				
Location EIA projects (with plans, approved or built)				
Geomorphology				
Geology				
Tectonic faults				
Hydrology (Groundwater)				
Hydrography				
Infrastructure				
Aqueducts				
Road map				
Schools				
Hospitals				
Transmission lines				
Aridity index				
Location Dams				
Slope				
Political and Administrative				
Departments				
Municipalities				
Municipal Headers				
City, town				
Population Density				
Routes of Hurricanes and Storms				
Earthquake tectonic (seismic activity)				
Soil type				
Units Resource Planning Use of Soil (URP)				
Use and coverage of the Earth				
Areas of Life Holdridge				
Heritage Areas				
Architectural				

Archaeological				
Zones Producing Water				
Areas Vulnerable to Landslides and floods				
ADDITIONS TO ORIGINAL DATALAYER LIST				
Private Reserves				
Hillshade				
Biological corridor (migration?)				
Air quality monitors with metadata				
Water quality monitors/metadata				
Groundwater monitors /metadata				
Past EIA project locations				
Pending EIA project locations				

(1) Indicate which data layers are those most often are used in evaluating EIA

(2): You can base its rating on the quality of the source and data and the fact that information has metadata under the standard FGDC.

Workshop Worksheet

List of GIS data layers for analysis and evaluation of projects EIA	Institution Responsible			Data Access			Means of Access	
	Name	Role*	Notes	Ministry	Public	Website	Form	Fee
Protected Areas								
Sensitive areas (mangroves, wetlands)								
Quarries and Aggregates								
Productive capacity of soils								
Climate								
Average annual precipitation								
Speed and prevailing wind direction								
Average Temperature								
Contour								
Basins and sub-basins								
Ecosystems (Unesco)								
Location EIA projects (with plans, approved or built)								
Geomorphology								
Geology								
Tectonic faults								
Hydrology (Groundwater)								
Hydrography								
Infrastructure								
Aqueducts								
Road map								
Schools								
Hospitals								
Transmission lines								
Aridity index								
Location Dams								
Slope								
Political and Administrative								
Departments								
Municipalities								
Municipal Headers								
City, town								
Population Density								
Routes of Hurricanes and Storms								
Earthquake tectonic (seismic activity)								
Soil type								
Units Resource Planning Use of Soil (URP)								
Use and coverage of the Earth								
Areas of Life Holdridge								
Heritage Areas								
Architectural								
Archaeological								
Zones Producing Water								
Areas Vulnerable to Landslides and floods								
Protected Areas								
Sensitive areas (mangroves, wetlands)								
Otras								

(1): Indique cuales capas de datos son las que con más frecuencia son usadas en la evaluación de EIA.
Role: Collect Data, Manage Data, Provide Access to data

(2): Puede basar su clasificación en la calidad de la fuente y de los datos en el hecho de que la información cuenta con metadatos bajo el estándar FGDC.

Attachment 3 *Example Design Applications*

- Step 1: Review the application screen captures from EPA and adaptations from other countries.
- Step 2: Discuss among leadership within organization and establish a decision structure and schedule
- Step 3: Revise written material and design as desired.
- Step 4: Provide design to EPA for incorporation into the system that will be deployed.
- Step 5: We only request that some acknowledgement be made to the fact that this was designed and provided by U.S. EPA in cooperation with [funding organization] and [Ministry]

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SIG-RENEA
Sistema de Información Geográfica
del Registro Nacional de Evaluación
Ambiental (SIG-RENEA)

Bienvenidos al visualizador de Información Geográfica del Registro
Nacional de Evaluación Ambiental (SIG RENEA) de Nicaragua.

SIG RENEA es una herramienta web que muestra la ubicación de los proyectos y
empresas nicaragüenses y los relaciona con información geográfica importante como
ríos, infraestructura, áreas protegidas, ecosistemas entre otros temas de manera
dinámica y sencilla, facilitando las evaluaciones ambientales de obras o proyectos que
solicitan un permiso o autorización ambiental ante el Ministerio del Ambiente y los
Recursos Naturales, MARENA.

Podrá también encontrar información sobre el Sistema de Evaluación Ambiental y todo
el marco legal que rigen las actividades económicas y productivas de nuestro país.

MARENA
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Evaluación Ambiental

Ayuda

Usuario:

Contraseña:

Aceptar

SIG-RENEA es el resultado de una colaboración con el (ELE) de USAID y US EPA.
Gracias a US EPA por el sistema que le proporcionan a Nicaragua.

SIG-RENEA
Sistema de Información Geográfica
del Registro Nacional de Evaluación
Ambiental (SIG-RENEA)

Cada país especificará los criterios de selección a un área de estudio. La
siguiente selección debe estar basada en Departamentos, Municipios y
Coordenadas. (Por ejemplo: -86.2488, 12.1435).

Nueva Area de Estudio   Sesión Guardada

⊙ Por lugar

Departamentos ⌄ | Entrar en un lugar

○ Por medio de coordenadas

○ Formato de Grados Minutos Segundos:
(Por ejemplo: latitud=12°08'30.60", longitud=86°14'55.68")

Latitud [ ]° [ ] [ ]
Longitud [ ]° [ ] [ ]

○ Formato de Grado Decimal:
(Por ejemplo: -86.2488, 12.1435. Para la línea o un polígono, introducir más de un
par de coordenadas.)

Coordenadas:

[   ]

Buscar   Restablecer

MARENA
Ministerio del Ambiente
y los Recursos Naturales

RENEA v1.0
Registro Nacional de
Evaluación Ambiental

Ayuda

- Step 6: Review analytical yes-no questions developed by U.S. EPA and others for suggested format
- Step 7: Develop draft set of standard yes-no questions based upon a) available data layers, b) questions asked in any EIA related applications
- Step 7: Propose standard analytical questions and ensure decision maker approval
- Step 8: Provide analytical questions and associated data layer information to EPA for incorporation into the system that will be deployed.

Área de un polígono digitalizado — 0.04sq km

Municipal

En un radio de 100 m de una cabecera municipal? — no

A una distancia de 100 m de una ciudad? — no

Hidrogeología

A una distancia de 100 m de un río? — no

A una distancia de 100 m de un cuerpo de agua? — no

Ecosistema

Dentro de un área protegida (marina)? — no

Dentro de un área protegida (terrestre)? — no

Dentro de uso y cobertura de tierra? — si

Dentro de un área con bosque de pino? — no

A una distancia de 100 m de un área con bosq

A una distancia de 100 m de un área con bosq

A una distancia de 100 m de un área con bosq

A una distancia de 100 m de un área con arbus

A una distancia de 100 m de un área con arbus estacional?

A una distancia de 100 m de un área con bosq estacional?

Geología

Dentro de un área con pendientes entre 0-15%

Dentro de un área con pendientes entre 15-30%

Dentro de un área con pendientes entre 30-50%...

Dentro de un área con pendientes mayores al 50%? — no

Transporte

A una distancia de 100 m de un camino? — no

A una distancia de 200 m de un carretera principal? — si

Cuestión Informe: *Dentro de un área protegida (terrestre)?*
Modificar la pregunta introduciendo una distancia de buffer nueva unidad para el área de estudio seleccionado:

[20] [km ▾] [Submit Query]

Características dentro de Área de Estudio

Características que se encuentran: 7

Nombre/Name	Distancia/Distance	Unidades/Units
Laguna de Tiscapá	10.19	km
Volcán Masaya	13.50	km
Laguna de Asososca	14.69	km
Laguna de Nejapa	15.58	km
Península de Chiltepe	16.62	km
Chocoyero El Brujo	18.62	km
Laguna de Tisma	19.23	km

IMPACT Category	Type of	Example NEPAssist Analytical Yes-No Question	Example Criteria
Air resources	Polluted air	Within an area designated non-attainment for any criteria pollutants?	400m
Social Infrastructure	Cemetery	Within 100 meters of a cemetery?	100m
Cultural resource	Archaeological site	Within {x} meters of a Archaeological Site?	
Cultural resource	heritage	Is there a National Heritage T/E hexagon within {x}	
Cultural resource	historic	Is there a National Historic Place within {x}	
Cultural resources	Indigenous peoples	Within Native American Land?	
Drinking water source	Aquifer	Within 300' of a sole source aquifer?	300 -500 feet
Drinking water source	Drinking Water Treatment	Are there SDWIS facilities within {x}	
Drinking water source	private	Within zone of contribution of a private water supply?	x
Drinking water source	public	Within the zone of contribution of a public water supply?	x
Economic Infrastructure	Airports	Are there airports within {x}	500m
Economic Infrastructure	Dam	Within {x} meters of a Non-navigational Dam?	
Economic Infrastructure	Marina	Within {x} meters of a Marina?	
Economic Infrastructure	Navigation Lock/dam	Within {x} meters of a Navigation Lock/Dam?	
Economic Infrastructure	Oil storage	Within {x} meters of an Oil Storage Facility?	
Economic Infrastructure	Pipeline	Within {x} meters of a Pipeline?	
Economic Infrastructure	Port	Within [x] meters of a port?	400m
Polluting Facilities	Farm	Within {x} meters of a Poultry or Hog Farm?	
Polluting Facilities	Feedlot	Within {x} meters of an Animal Feedlot?	
Risk	Floodplain	Within [x] meters of a designated 100-year FEMA floodplain?	400m
Polluting Facilities	Hazardous waste facility	Are there any LQG or RCRA sites {x}	500m
Cultural resources	Indigenous peoples	Within [x] of tribal land? What tribe?	1000 feet
Political Infrastructure	Planning boundaries	Within the boundaries of a Metropolitan Planning Organization?	
Water resources	Polluted waters	Are there IMPAIRED WATERS within {x}	
Polluting Facilities	Air emissions	Are there AIRS/AFS sites within {x}	
Polluting Facilities	electric power plant	Within {x} meters (1 mile) of an Electric Power Plant?	2000m
Polluting Facilities	nuclear power plant	Within {x} meters (1 mile) of a Nuclear Power Plant?	1 mile
Polluting Facilities	toxic releases	Within [x] of a TRI site?	100 feet
Polluting Facilities	Water discharge	Within [x] of an existing NPDES permit?	100 feet
Recreational resources	Park	Within a park?	within
Recreational resources	Recreational resources	Where are the nearest local, state, or federal parks and managed areas?	x
Recreational Resources	Wild River	Within [x] meters of a wild and scenic river?	300 feet
Risk	Seismic	Within high hazard area?	
Sensitive Ecosystems	Conservation area	Within 400 meters of a managed land/conservation area?	400m
Sensitive Ecosystems	Drinking Water supply	Within 400 meters of a designated sole source aquifer?	400m
Sensitive Ecosystems	Forest	Within {x} meters of a [National][State][Local] Forest?	400m
Sensitive Ecosystems	Other	Within Other Environmentally Sensitive Areas?	
Sensitive Ecosystems	Recreational resources	Within {x} meters of an American Heritage River?	
Sensitive Ecosystems	Sensitive	Within {x} meters of a Wild and Scenic River?	

IMPACT Category	Type of	Example NEPAssist Analytical Yes-No Question	Example Criteria
	Ecosystems		
Sensitive Ecosystems	Shoreline	Within {x} meters of a Great Lakes shoreline?	
Sensitive Ecosystems	Shoreline	Within {x} meters of an Environmentally Sensitive Shoreline?	
Sensitive Ecosystems	Wellhead	Within a wellhead protection area?	x
Sensitive Ecosystems	Wetland	Within 300' of NWI wetlands?	300m
Sensitive Ecosystems	wetland	Within 500 meters of an NWI wetland (remote)?	500 m
Sensitive Ecosystems	Wetland	Within a designated wetland	300m
Sensitive Ecosystems	Wildlife Refuge	Within [x] meters of a designed wildlife or conservation area	400m
Sensitive Ecosystems	Wildlife Refuge	Within a Wildlife Refuge? Within [x] meters of a Wildlife refuge	400m
Social Infrastructure	Cemetery	Within {x} meters of a Cemetery?	
Social Infrastructure	Hospital	Within x meters of a hospital?	400m
Social Infrastructure	Park	Within [x] of a Regional/County/Local Park?	300m
Social Infrastructure	Schools	Within {x} meters of a school?/educational institution	400m
SocioEconomic	Minority populations	Is there an EJ CO-OCCURRENCE (Minority/Poverty/Both) blockgroup within {x}	
Polluting Facilities	Toxic/Hazardous Waste Dump	Are there CERCLIS facilities within {x}	100 feet
Water polluting facility	Water discharge	Are there PCS facilities within {x}	
Water resources	Lake basin	Within an Area of Concern (Great Lakes)?	
Water resources	Polluted waters	Within or adjacent to a degraded or water quality limited stream?	400m
Water resources	Acid mine drainage	Within [x] meters of an AMD waterbody	500m
Sensitive Ecosystems	Wetland	Within 400 meters of a designated wetlands area?	400m
Risk	Floodplain	Within 500 meters of a FEMA Flood Area?	500 m
Sensitive Ecosystems	Resource	Within {x} meters of a Exceptional or Outstanding Resource Water?	400m
Risk	Health-air toxics	Within 1000' of a census tract that has a NATA-predicted ambient diesel particulate matter concentration in the top quartile of all census tracts in R9?	1000 feet
Risk	Health-air toxics	Within 1000' of a census tract that has a NATA-predicted increased cancer risk due to air toxics exposure in the top quartile of all census tracts in R9?	1000 feet
Risk	Health-air toxics	Within 1000' of a census tract that has a NATA-predicted increased noncancer hazard index due to air toxics exposure in the top quartile of all census tracts in R9?	1000 feet
Political Boundaries	Border	Within 100km of the Mexico border?	1000 feet
Water resources	Rivers	Within [x] meters of a major river?	400m

Attachment 4 Model invitations to the NEPAssist Workshop

LETTER OF INVITATION TO NEPAssist Workshop
Alternatives:
   a) From the Minister (Dominican Republic example)
   b) From the Focal Point

The U.S. Agency for International Development, USAID under USAID Cooperative Agreement with the U.S. Environmental Protection Agency (EPA) under CAFTA-DR - - the free trade agreement with Central America and the Dominican Republic--is implementing a Program to Strengthen Environmental Impact Assessment (EIA) processes.

One element of this program is the adaptation of the USEPA analytical tool for environmental impact assessment using geographic information systems (GIS-EIA) known as NEPAssist for ....[country]...........

In this regard, I would invite you to attend the workshop on the analytical GIS-based EIA tool developed by and for the U.S. Environmental Protection Agency to be held in [CITY], [COUNTRY] on [DATE] at the [LOCATION] from 8:00 am to 2:00 pm. Please find enclosed the agenda of the workshop.

We hope to benefit from your valuable presence in this workshop.

AGENDA
LANZAMIENTO DE LA HERRAMIENTA ANALÍTICA EIA-GIS

8:00 am – 2:00 pm

PRIMER DIA, x de y, Hotel z	HORA
1. Inscripción de los participantes *Participants' registration*	8:00 a 8:30 am
2. Acto Protocolario *Opening Remarks*	8:30 a 8:45 am
3. Descripción General sobre el Programa de CAFTA-DR para Reforzar la Revisión de EIA Cheryl Wasserman, EPA *Description of the CAFTA-DR Program to Strengthen EIA Review*	8:45 a 9:00 am
4. Demostración de la Herramienta de Escrutinio EIA-SIG (NEPAssist) con preguntas y respuestas Julie K. Kocher, EPA; X. Vincent Zuang, SAIC *Demonstration of the EIA-GIS analytical tool for EIA Review (NEPAssist) with questions and answers*	9:00 a 10:00 am
5. Discusión de Aplicaciones Específicas para El Salvador y de Sugerencias para Adaptarlas *Discussion of specific applications in _____ and suggestions for how to adapt the tool*	10:00 a 10:30 am
Refreshments/Break	10:30 a 10:45 am
6. Discusiones en Grupos Pequeños sobre las Distintas Capas de Datos en _____, Recursos, y la Disponibilidad de estos Datos y Recursos *Small Group Discussions about data layers in _____, resources, and availability of data and resources*	10:45 a 12:00 pm
7. Sesión Plenaria, Reportes de los Grupos Pequeños Explicación de mesas de trabajo/EPA *Plenary Session, Small Group Reports*	12:00 a 1:00 pm
Almuerzo Lunch	1:00 a 2:00 pm

PRIMER DIA, _____ Reunión Técnica,	HORA
Participantes: **EPA NEPAssist Team:** Cheryl Wasserman, Julie K. Kocher, X. Vincent Zuang, SAIC **ELE:** Mario Chacon **MINISTERIA:** _____, Director de EIA, _____ Jefe de Información Ambiental; _____	
1. Descripción Técnica sobre la Aplicación *Technical description of the application*	2:00pm a 4:00pm

SEGUNDO DIA, _____, Revisión Técnica de Sistemas y Datos, Oficinas de _____	HORA
Participantes: **EPA NEPAssist Team**: Julie K. Kocher,, X. Vincent Zuang, **ELE**: Mario Chacon _____: Director de _____., (_____)	
1. Discusión acerca de la plataforma de EIA-SIG (sistema de datos, el servidor ArcGIS, etc.) *Discussion about the platform for the EIA-GIS Tool (data systems, ArcGIS Server, etc.)* 2. Pruebas de rendimiento para el servidor ArcGIS *Performance test for ArcGIS Server* 3. Sesión Técnica: El servidor ArcSDE, como procesar las capas de datos en SDE *Technical Session: ArcSDE Server, how to process the data layer in SDE* 4. Sesión Técnica: EL servidor ArcGIS *Technical Session: ArcGIS Server* 5. Pasos requeridos para el lanzamiento de EIA-SIG *Required steps for the launch of the EIA-GIS Analytic Tool*	9:00am a 3:00pm
6. Plan de Acción Técnica y Pasos Siguientes a Ser Completados por EPA, El Salvador y ELE Participantes: Ministeria? EIA Director, GIS Director, Cheryl Wasserman, Julie K. Kocher, X. Vincent Zuang, Mario Chacon Venue: _____ Office *NEPAssist Plan of Action and next steps to be undertaken by EPA, _____ and ELE*	3:00 a 4:00 pm

Parallel sessions:

SEGUNDO DIA, 24 de Febrero	HORA
7. Planificación de Otras Posibles Actividades de EIA Bajo el Programa de CAFTA-DR Participantes: _____Director de EIA, Cheryl Wasserman_____ Venue: _____ Office *Planning for other activities under the CAFTA-DR EIA Program*	9:00 a 10:30 am
Break	10:30 am-11:00 am
8. Planificación de Otras Posibles Actividades de EIA Bajo el Programa de CAFTA-DR Participantes: _____Director de EIA, Focal Point, Cheryl Wasserman_____ Venue: _____ Office *Planning for other activities under the CAFTA-DR EIA Program*	11:00 a 12:00 am
Lunch	12:00-1:00 pm
9. Planificación de Otras Posibles Actividades de EIA Bajo el Programa de CAFTA-DR Participantes: _____Director de EIA, Focal Point, Ministeria_____, USAID, Cheryl Wasserman_____ Venue: _____ Office *Planning for other activities under the CAFTA-DR EIA Program*	1:30 a 3:00 pm

Attachment 5

Suggested program for the two day visit.

Step 2 Agenda

Taller Evento Presentación y Planificación de NEPA Assist en _____

DÍA 1 _____
Instalaciones _____
HORA: 8:30 AM -1:00 PM

8:00	Registro de Participantes
8:30-8:45	Bienvenida Por el Funcionario representante de _____ Expectativas. Descripción General sobre el Programa de CAFTA-DR para Reforzar la Revisión de EIA.
8:45-9:00	Introducion de los Participantes
9:00-10:00	Una Demostración de la herramienta de escrutinio EIA-SIG ("NEPAssist") seguida por una sesión de preguntas y respuestas
10:00-10:30	Discusión de aplicaciones específicas para _____ y de sugerencias para adaptarlas
10:30-10:45	Descanso
10:45-12:30	Discusiónes sobre las distintas capas de datos en _____, recursos existentes, y la disponibilidad de estos datos y recursos (discusiones en groupos pequenios)
12:30-1:00	Report out and wrap up
1:00-2:00	Almuerzo

Other meetings alter the event:
Personal SIG – EPA – Proyecto ELE
Instalaciones de _____
9:00 AM - 3:00 PM
3:00-5:00 Descripción técnica sobre la aplicación
3:00-5:00 Planification _____

DÍA 2 _____
Personal SIG – EPA – Proyecto ELE
Instalaciones de _____
9:00 AM - 3:00 PM
Revisión técnica de sistemas y datos - Director de SIG y su personal, Personal EPA y Proyecto ELE
- Discusión acerca de la plataforma de EIA-SIG (sistema de datos, el servidor ArcGIS, etc.)
- Pruebas de rendimiento para el servidor ArcGIS
- Sesión Técnica: El servidor ArcSDE, como procesar las capas de datos en SDE
- Sesión Técnica: EL servidor ArcGIS
- Pasos requeridos para el lanzamiento de EIA-SIG

Personal SIG – EPA – Proyecto ELE – Calidad Ambiental – Personal de Alto nivel
Instalaciones Ministeria....
3:00-4:00

- Sesión final: Elaboración de Plan de acción y pasos siguientes a ser completados por USEPA, _____ y el contratista de USAID

Attachment 6
Example Action Plan for Deployment

"NEPA Assist" for XXXXXXXXXXXXXX Action Plan							DATE Draft	
Task	Responsibility						Date	Notes
	MINISTERIA							
	Focal Point	IT	SIG	EIA	?	EPA		
Hardware								
Software								
Interface								
						X		
Ministry reviews installed program/finalize interface language			X	X				Not substance
Data Layers								
Select data for installation among data layers within current GIS System			X	X				
Review data layers in GIS Sytem for shapefiles			X					
Ensure data layers already in GIS system have metadata files			X					
Populate metadata files using FGDC standards to the extent possible			X					
Select for desired installation among data layers not in SEMARENA GISsystem			X					
Contact other Ministries/institutions about access to data			X					
Assess shapefiles/metadata files for data with web capability			X					
Develop action plan to address deficiencies identified in								
Develop action plan/alternatives for data without web access			X					
to make data accessible to SEMARENA--assess shapefiles/metadata files								
Create a MXD file with proper cartography and symbology (EPA will use to publish the map service for NEPA Assist--color, pattern, thick and thin line--Key/Legend on a map)			X					
Questions for EIA Screening Analysis Report			X	X		X		
Installation						X		May need to briefly reboot
Training						X		

Attachment 7

Sample program for the 5 day Deployment and Training visit.

AGENDA

MARN NEPAssist Installation

SAN SALVADOR

January 25 – 29, 2010

8:00 am – 4:00 pm

January 25 - 28 NEPAssist Installation and Technical Training MARN GIS Lab	HORA
Participants: **EPA NEPAssist Team:** Julie Kocher, EPA, Vincent Zhuang, SAIC, Xiaowen Huang, SAIC **ELE:** Mario Chacon **MARN:** MARN GIS Staff Members Responsible for Maintaining NEPAssist	
January 25 - NEPAssist Installation and Shapefile Preparation	8:00 am - 4:00 pm
January 26 - NEPAssist Installation and Shapefile Preparation	8:00 am - 4:00 pm
January 27 - NEPAssist Analysis Question Configuration and Training	8:00 am - 4:00 pm
January 28 - Demo and Logic Walkthrough of NEPAssist	8:00 am - 4:00 pm

January 29	HORA
Address Outstanding Technical Issues and Questions **From MARN GIS and Mario** **Marn GIS Lab** **Participants:** **EPA NEPAssist Team:** Julie Kocher, EPA, Vincent Zhuang and Xiaowen Huang, SAIC **ELE:** Mario Chacon **MARN:** MARN GIS Staff Members Responsible for Maintaining NEPAssist	8:00 am - 12:00 pm
Lunch	12:00 pm – 1:00 pm
Demonstration of MARN NEPAssist Application **Location :** **TBD** **Participants:** **MARN:** MARN GIS and EIA Teams **ELE:** Mario Chacon **EPA NEPAssist Team:** Julie Kocher, EPA, Vincent Zhuang and Xiaowen Huang, SAIC	1:00pm - 3:00pm

Other useful documents/attachments

- Power point presentation on NEPAssist
- Guide: How to Add Data Layers
- Guide: User guide and Layer Registration