Weaving a Solution

Web Based Solutions to Infrastructure and Asset Management

Web Technologies and Capital Projects

Presented by:

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Introduction

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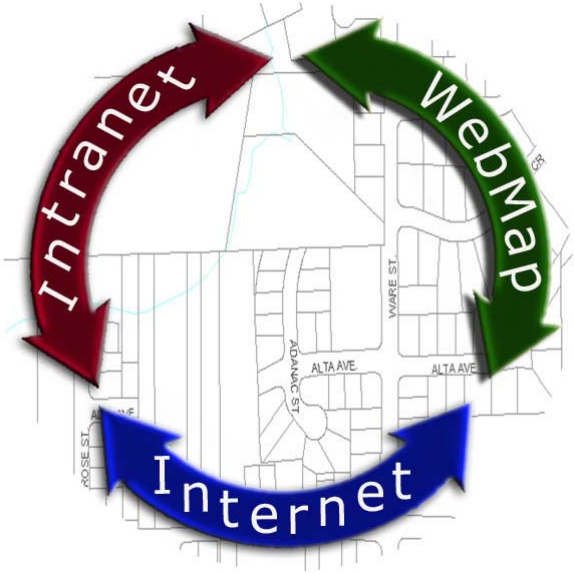
Web based Solutions to Infrastructure and Asset Management

- Task
  - To improve data management of Major Capital Investment for Abbotsford
  - To improve use of resources by streamlining the gathering and sharing of information, internally and externally
  - Four components
    - GIS
      – spatial data entry point
    - WebMap
      – web based mapping tool
    - Intranet
      – in-house website
    - Internet
      – world wide access to Abbotsford data

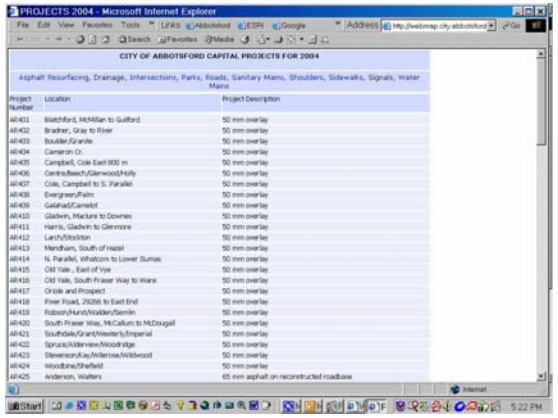


Goals

- To develop user-friendly applications
- Multi-user editing capability
- Single database
- Selection of reports
- Limit maintenance required
- Expandable

Former Workflow

- Convert Excel spreadsheet to static HTML document
- Use attributes on GIS database to link to HTML
- Multiple data sources
- Relied on co-ordination between departments
- Not user friendly and labour intensive
- Inflexible – compounded mistakes, hard to trace



Old Capital Projects Listing Screen

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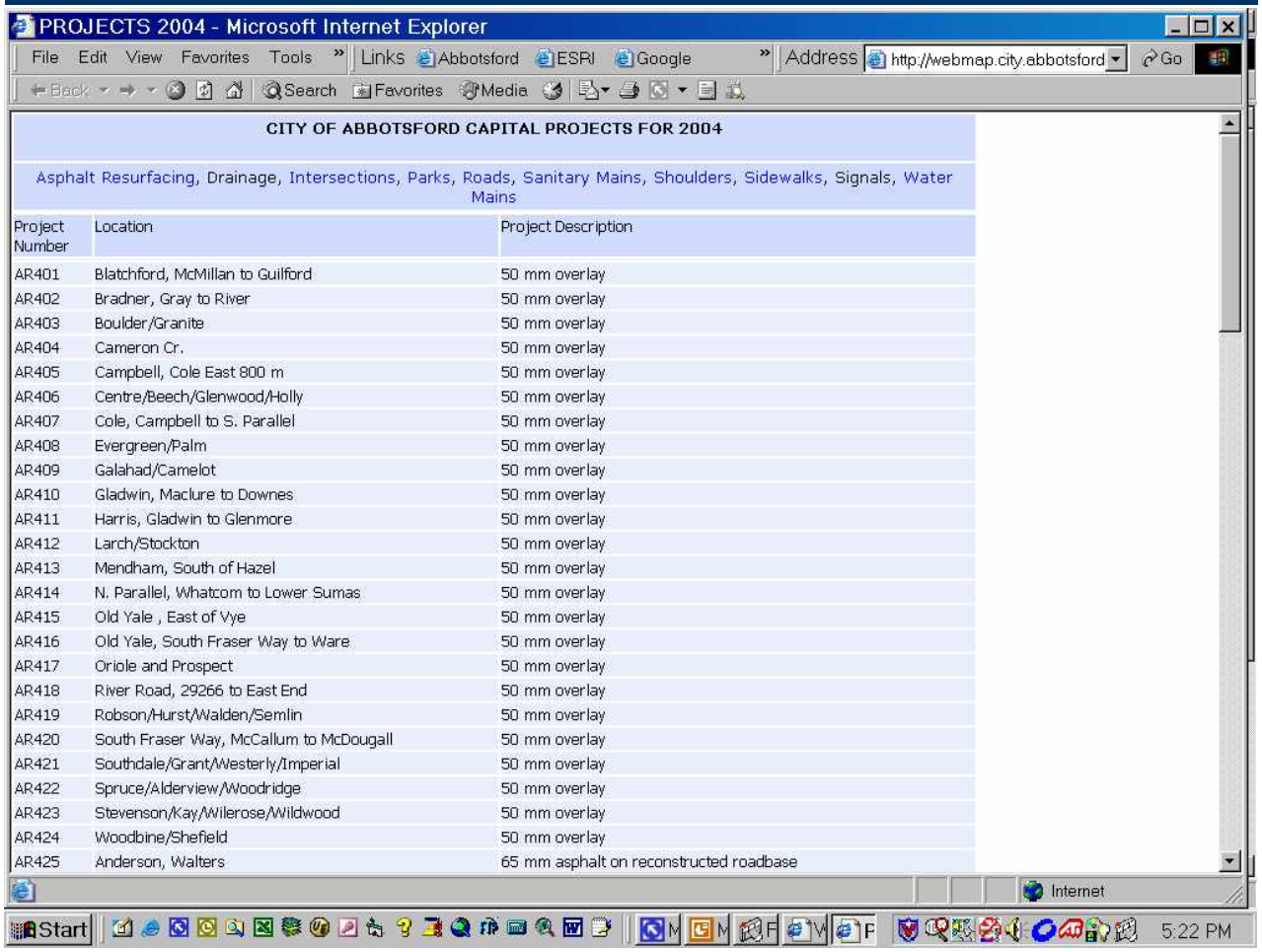

CITY OF ABBOTSFORD CAPITAL PROJECTS FOR 2004

Asphalt Resurfacing, Drainage, Intersections, Parks, Roads, Sanitary Mains, Shoulders, Sidewalks, Signals, Water Mains

Project Number	Location	Project Description
AR401	Blatchford, McMillan to Guilford	50 mm overlay
AR402	Bradner, Gray to River	50 mm overlay
AR403	Boulder/Granite	50 mm overlay
AR404	Cameron Cr.	50 mm overlay
AR405	Campbell, Cole East 800 m	50 mm overlay
AR406	Centre/Beech/Glenwood/Holly	50 mm overlay
AR407	Cole, Campbell to S. Parallel	50 mm overlay
AR408	Evergreen/Palm	50 mm overlay
AR409	Galahad/Camelot	50 mm overlay
AR410	Gladwin, Maclure to Downes	50 mm overlay
AR411	Harris, Gladwin to Glenmore	50 mm overlay
AR412	Larch/Stockton	50 mm overlay
AR413	Mendham, South of Hazel	50 mm overlay
AR414	N. Parallel, Whatcom to Lower Sumas	50 mm overlay
AR415	Old Yale , East of Vye	50 mm overlay
AR416	Old Yale, South Fraser Way to Ware	50 mm overlay
AR417	Oriole and Prospect	50 mm overlay
AR418	River Road, 29266 to East End	50 mm overlay
AR419	Robson/Hurst/Walden/Semlin	50 mm overlay
AR420	South Fraser Way, McCallum to McDougall	50 mm overlay
AR421	Southdale/Grant/Westerly/Imperial	50 mm overlay
AR422	Spruce/Alderview/Woodridge	50 mm overlay
AR423	Stevenson/Kay/Wilerose/Wildwood	50 mm overlay
AR424	Woodbine/Shefield	50 mm overlay
AR425	Anderson, Walters	65 mm asphalt on reconstructed roadbase

Possible Solutions

- Two solutions considered
  - Microsoft Access Runtime
  - Intranet accessing a database

Possible Solution - 1

- Access
  - Develop application
    - load
    - maintain
  - Limited access
  - No existing forms, queries etc.
  - Develop from scratch

Possible Solution - 2

- Web-based
  - Existing forms in ASP for webmap
  - Some in-house expertise
  - Unlimited access by public and staff

Solution – Option Two

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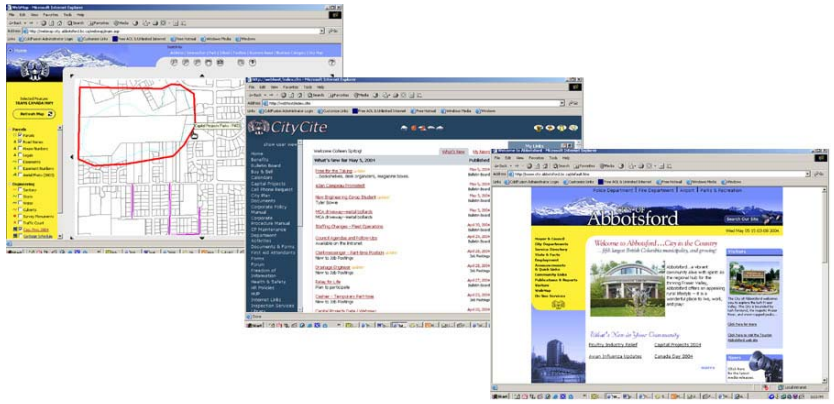
Web based Solutions to Infrastructure and Asset Management

- Web-based
  - Existing forms in ASP for webmap
  - Some in-house expertise
  - Develop code to maintain access database
  - Access for public and staff
  - Future potential



To get it done…

- Components
  - GIS
  - Webmap
  - Intranet
  - Internet

GIS

- Spatial data
- Maintained in ArcInfo by drafting department
- Download to WebMap already developed

WebMap

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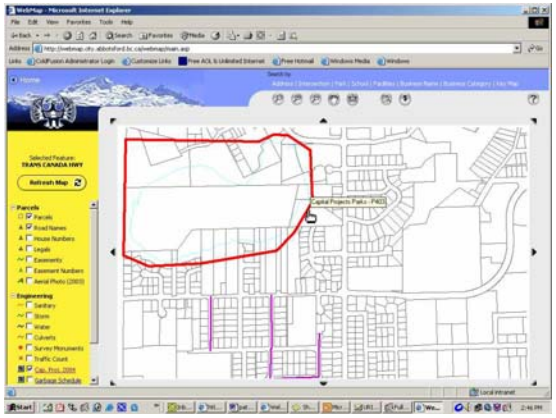
- Intergraph product
- Linked to ArcInfo GIS database
- Attributes already assigned (project number link)
- Link to Access database by project number
- Point and click for reports



Intranet

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- Intranet Connections product
- Integration capabilities with other applications
- Develop user-friendly forms and reports
- In-house development relatively easy

Internet

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- City website – www.city.abbotsford.bc.ca
- Provide access for the public to view reports
- Simple point and click interface with search function
- Link back to WebMap site, displaying capital project
- Much code already written

Application …

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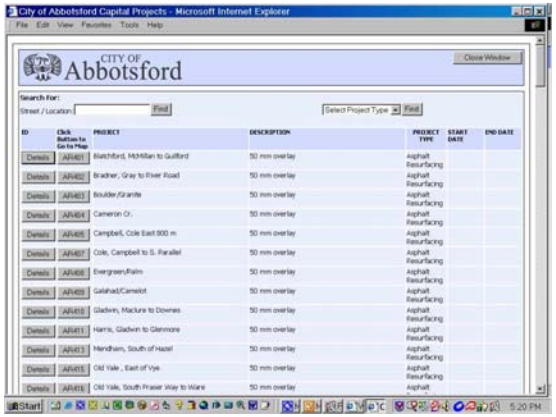
- Application designed and developed utilizing in-house expertise, including input forms, searchable lists, internal/external reports
- Secure access provided through Intranet software
- Connectivity to other servers to access additional information



Application …

- Spatial data entered in ArcInfo
- Uploaded to Webmap
- Access database edited via intranet
- Link established between database and map
- Internal reports generated from database
- External reports generated from database
  - Internet
  - Webmap

Application …

- Maintenance in hands of users
- Password protected
- Contact information derived from other Intranet database
- ASP used to run
  - data entry
  - editing
  - map

Intranet default screen

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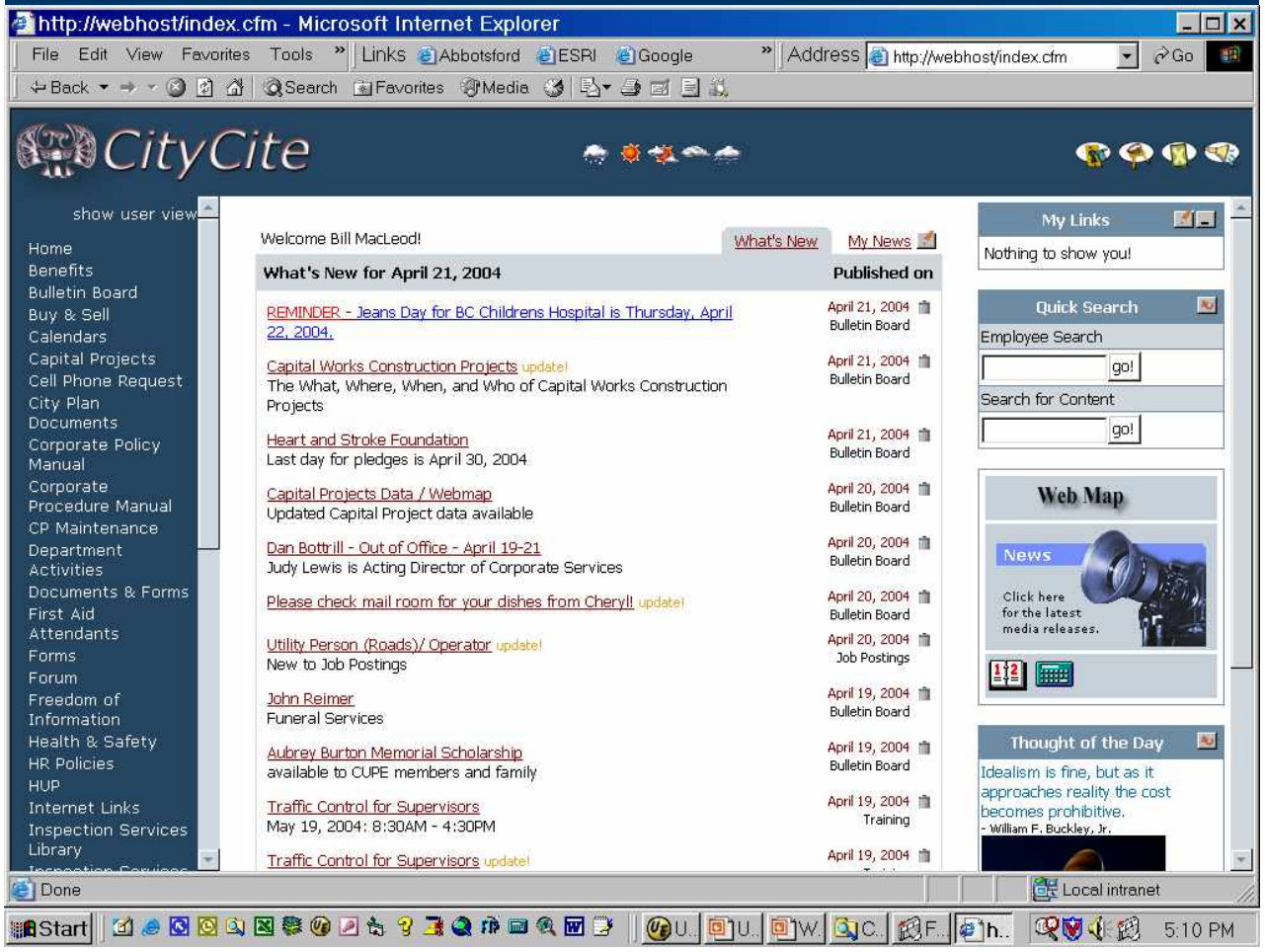

Capital Project Maintenance

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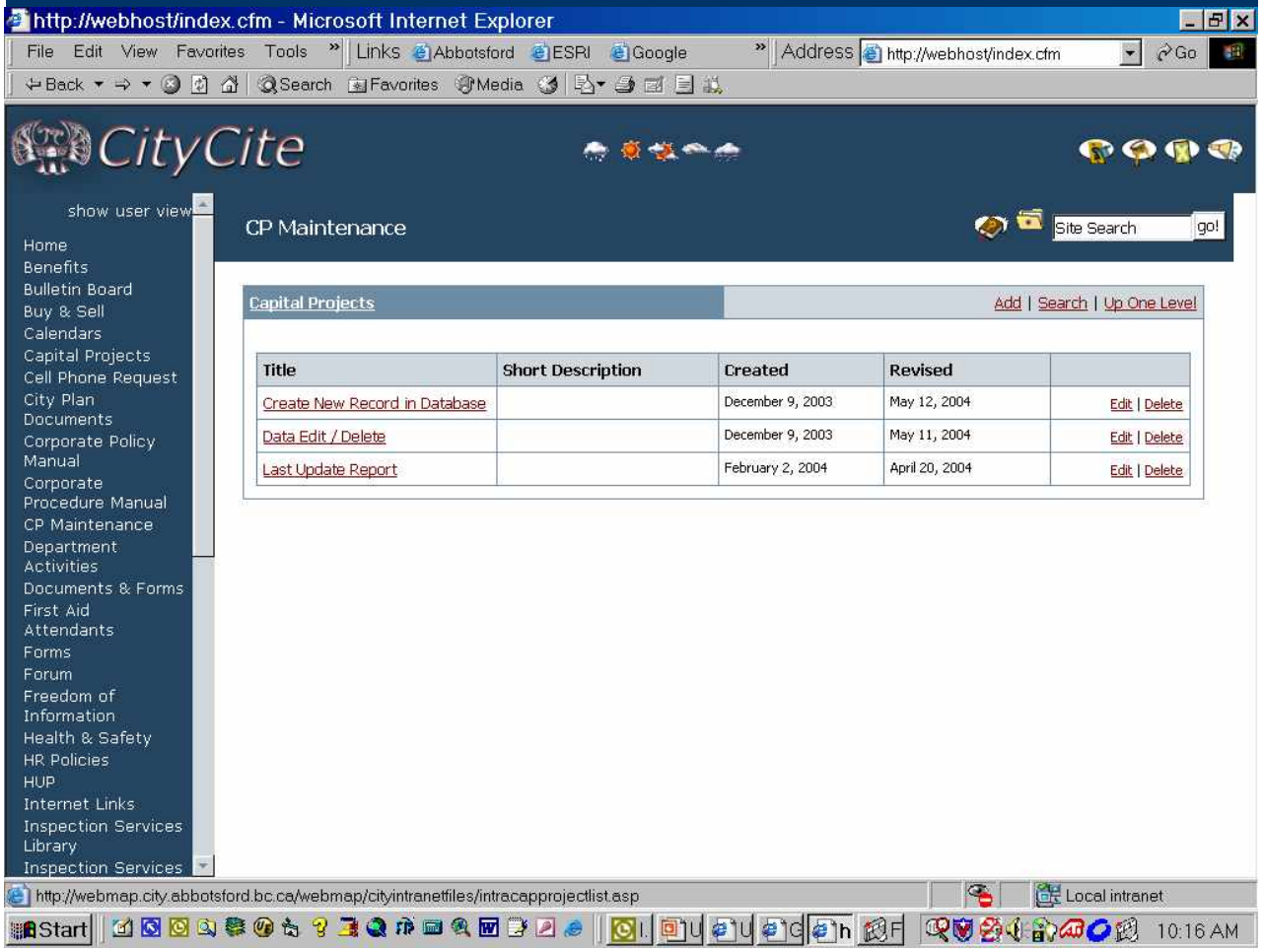

Intranet Data Editing Screen

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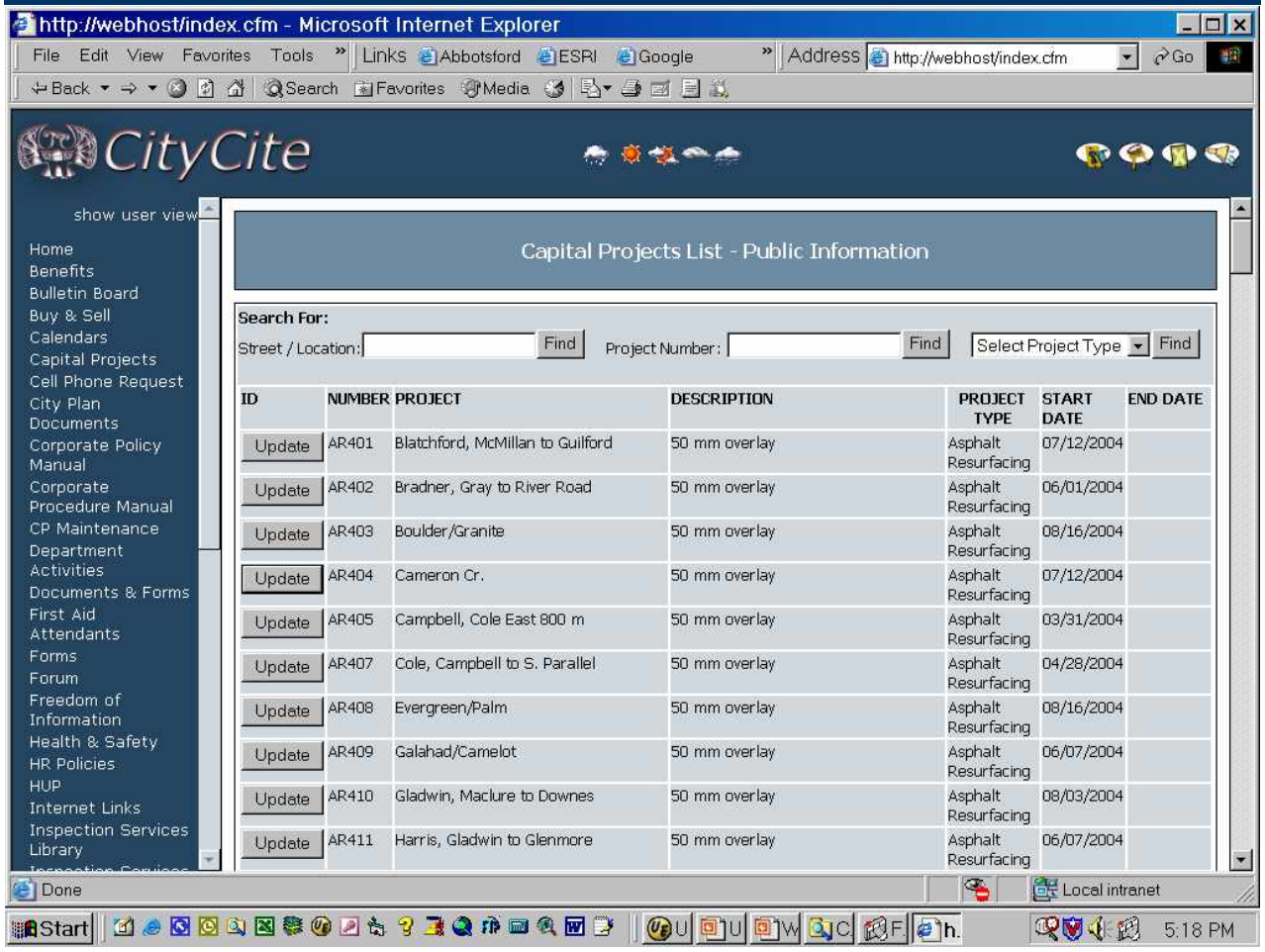
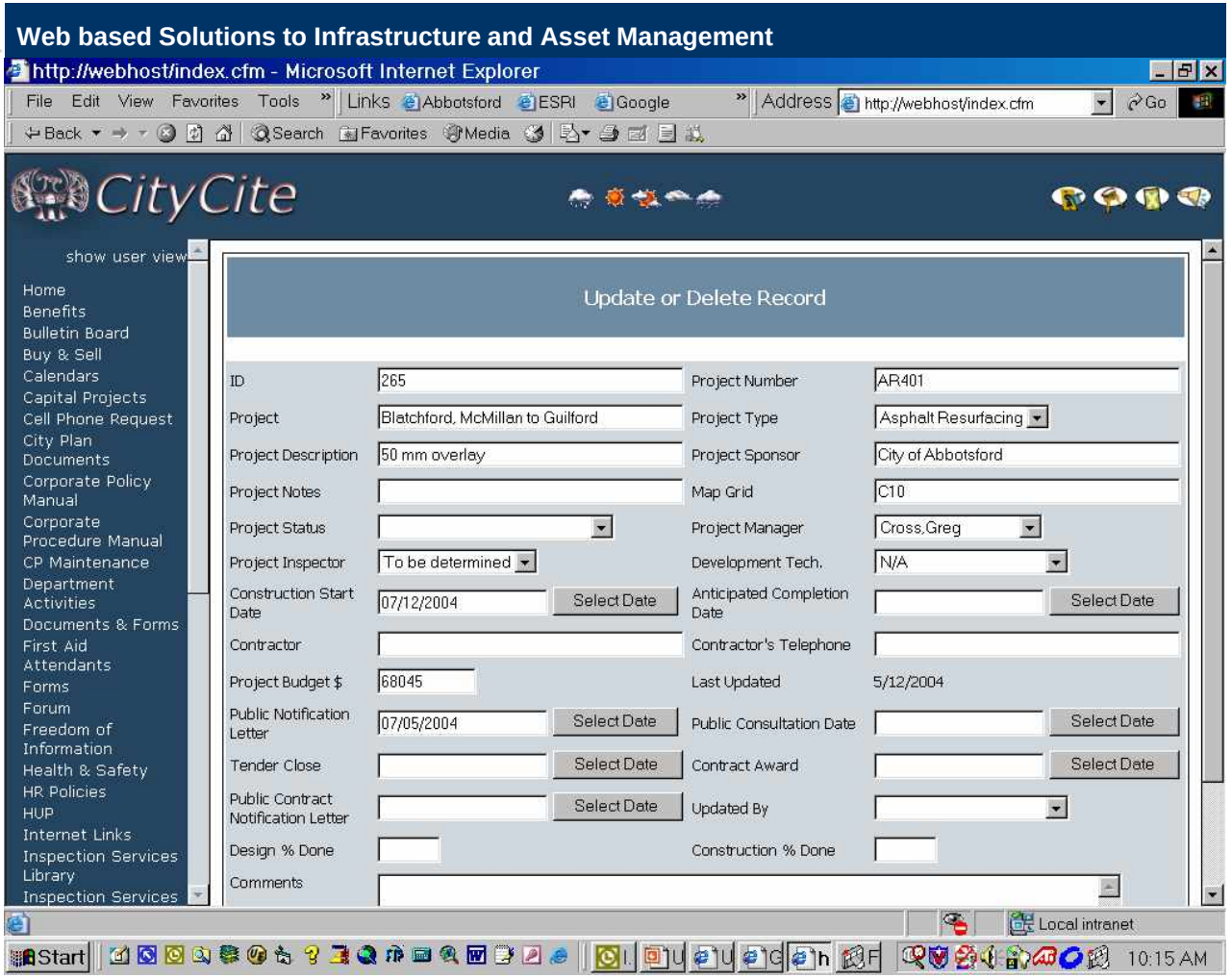
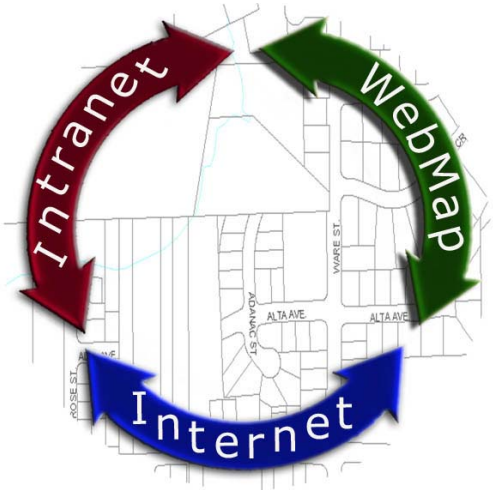


Data Entry Form



Conclusion

- Integrated approach to data management using GIS, Intranet, Internet and WebMap technologies
- Real time data update
- Reduces redundant data
- Intranet gives access to all City departments
- Internet and WebMap for public
- A model for future applications sharing technology



WebMap Project Listing

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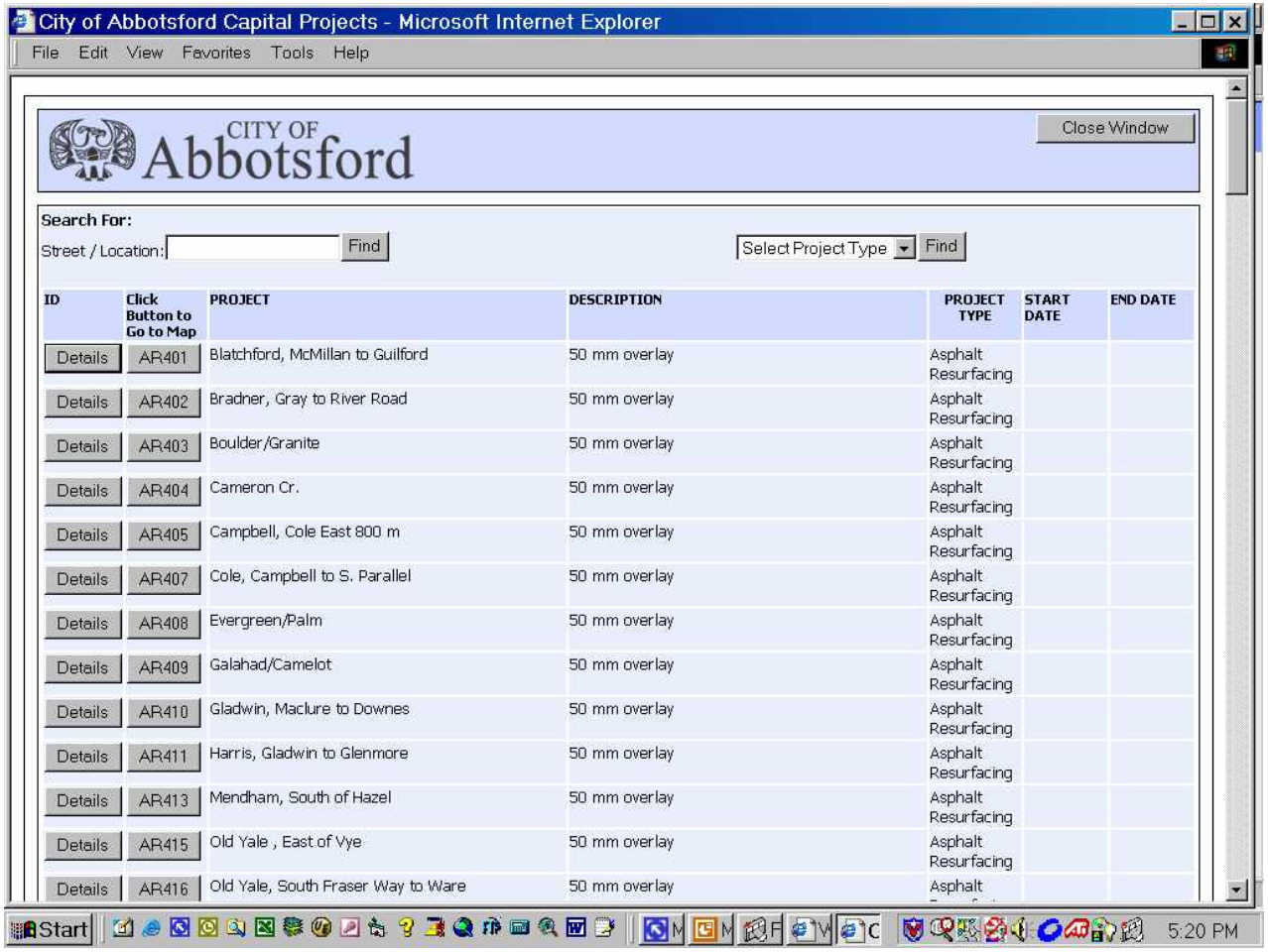

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WebMap Report

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WebMap Screen

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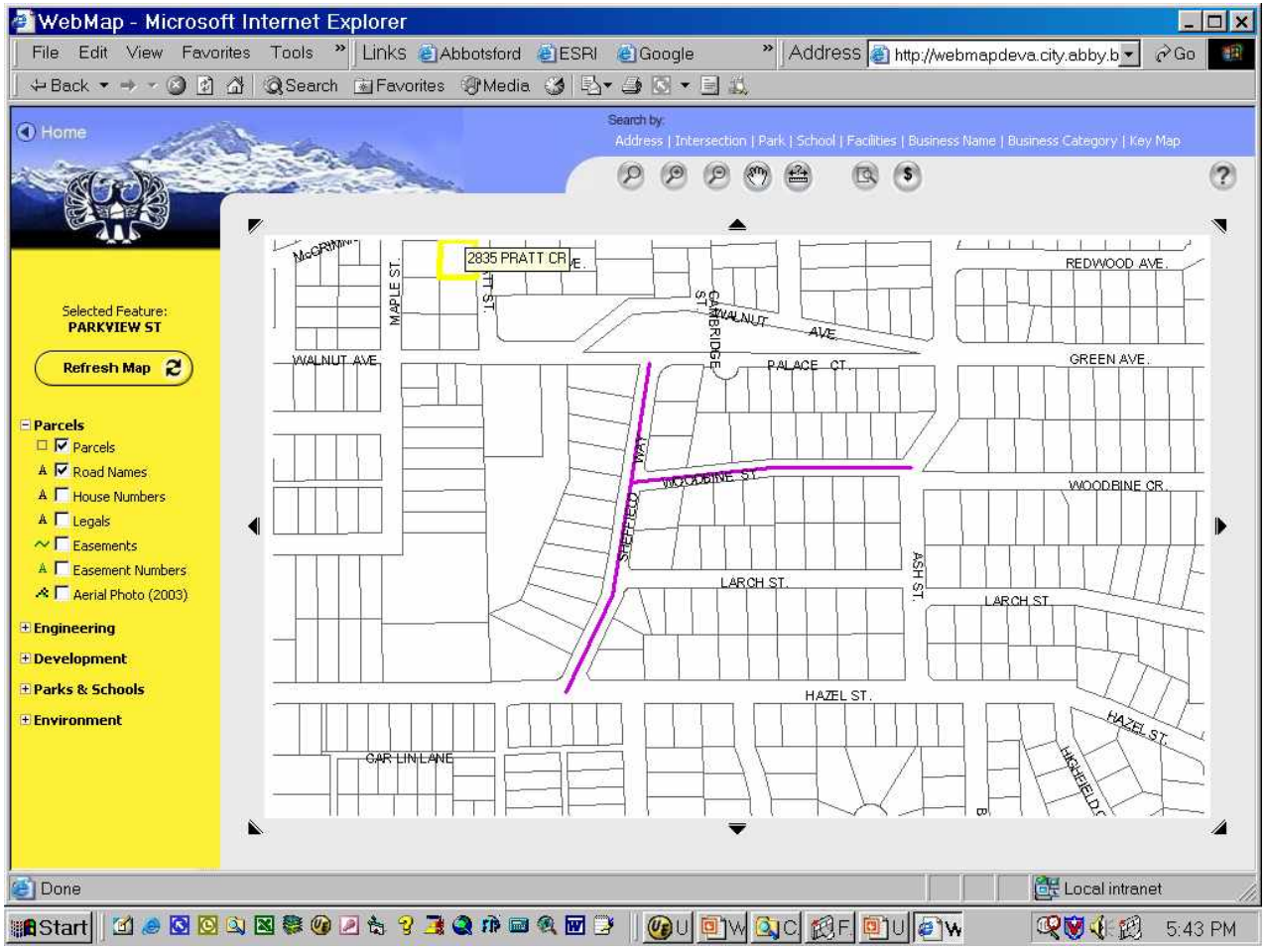
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