

# **CAMPUS MAP PUBLISHING SYSTEM PROTOTYPE PROJECT**

**UVM  
Transportation  
and Parking  
Services**

# AGENDA

**Review Project History (8 minutes)**

**Project Status Update (14 minutes)**

**Plan for Future (8 minutes)**

# MAP PROJECT HISTORY

# PROJECT TIMELINE

## June 14, 2012

### ■ Purpose and Scope

- S:\afs\TPS\TPS\2012\dpepper\20120601\_projectManagement\output\project\_01\_purposeAndScope\_201206151215.pdf

### ■ Major Goals Outlined:

- Store...
  - map data in database
  - assets in “library”
- Prepare to rapidly publish custom map products (w/data subsets):
  - Parking Lots by Permit Type
  - Residential Buildings by Permit Type
  - Bus Stops by Route
- Allow combinations:
  - For example, Blue Permit: Parking Lots, Residences, and Bus Routes

### TPS Business – Summer 2012 Project #1 Transportation and Parking Map

Title:	<b>Purpose and Scope</b>
Author:	David Pepper
Date:	6/14/2012
Version:	1.0

#### Purpose

The campus map is the single most important business document for our unit. It potentially plays a role in every academic prospect's experience, and every visit to campus which might use parking or transportation resources. In many cases the map is the only contact a user/customer has with our unit; it also makes a strong impression on people researching the school even if they never visit or contact the office.

The map and other references to it can-and-should be published widely. Depictions of it, or stylistic references to it should appear on the web site, linked from other unit's sites, in print, on kiosks/signage/vehicles, and in association with other entities who use it, for example as part of event promotion, etc. In short, the map should be an implicit part of our “brand” because it is so closely linked to our services.

As UVM Transportation and Parking, we are the owners and primary stakeholders of parking lots and bus routes/stops. Likewise, we are the proper and authoritative “content owner” of the user experience on the whole UVM website related to transportation to and from campus. TPS needs to develop a leadership position in these kinds of information and serve other units and UVM academic and business functions with various assets that publish “the transportation and parking map,” as well as directions to and from parking and transportation locations, and tools to aid communication about the same.

The first step in realizing this vision is to decisively move away from the a print-oriented publishing process (currently run by Print and Mail using Adobe Illustrator on behalf of DFES), to one which will allow us to rapidly create many different kinds of maps, using automation. Using such an approach we would develop and maintain a library of map assets outside of the medium of publication and would selectively assemble these

S:\afs\TPS\TPS\2012\dpepper\20120601\_projectManagement\project\_01\_purposeAndScope.docx Page 1

# PROJECT TIMELINE

## August 9, 2012

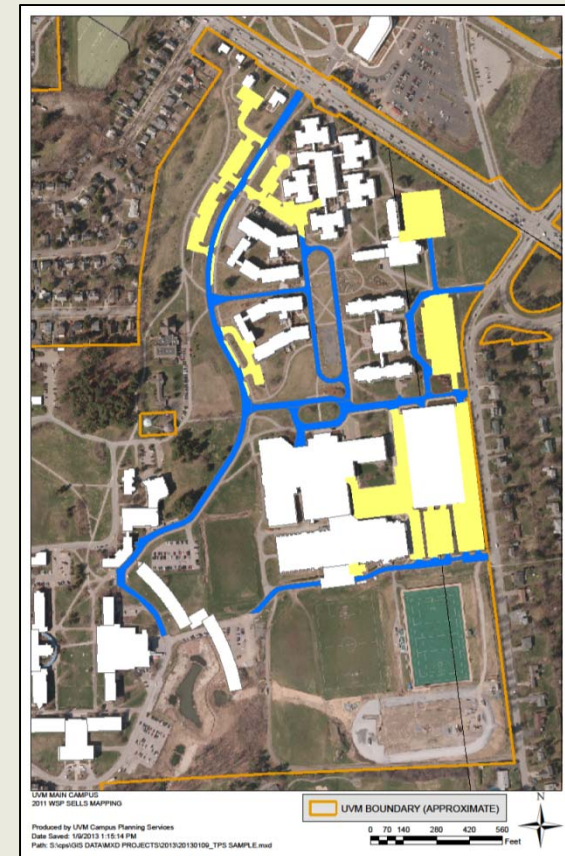
- Interviewed GIS Analyst  
Stephen R. Smith
- As Follow-up to meeting:
  - Researched UVM contracting process
  - Initiated laptop procurement
  - Contacted Campus Planning to request data
- Project slowed/delayed due to...
  - Holidays, etc.
  - Laptop procurement delays
  - Assumption that hiring an expert at the beginning of the project would not have been cost-effective



# PROJECT TIMELINE

## January 9th, 2013

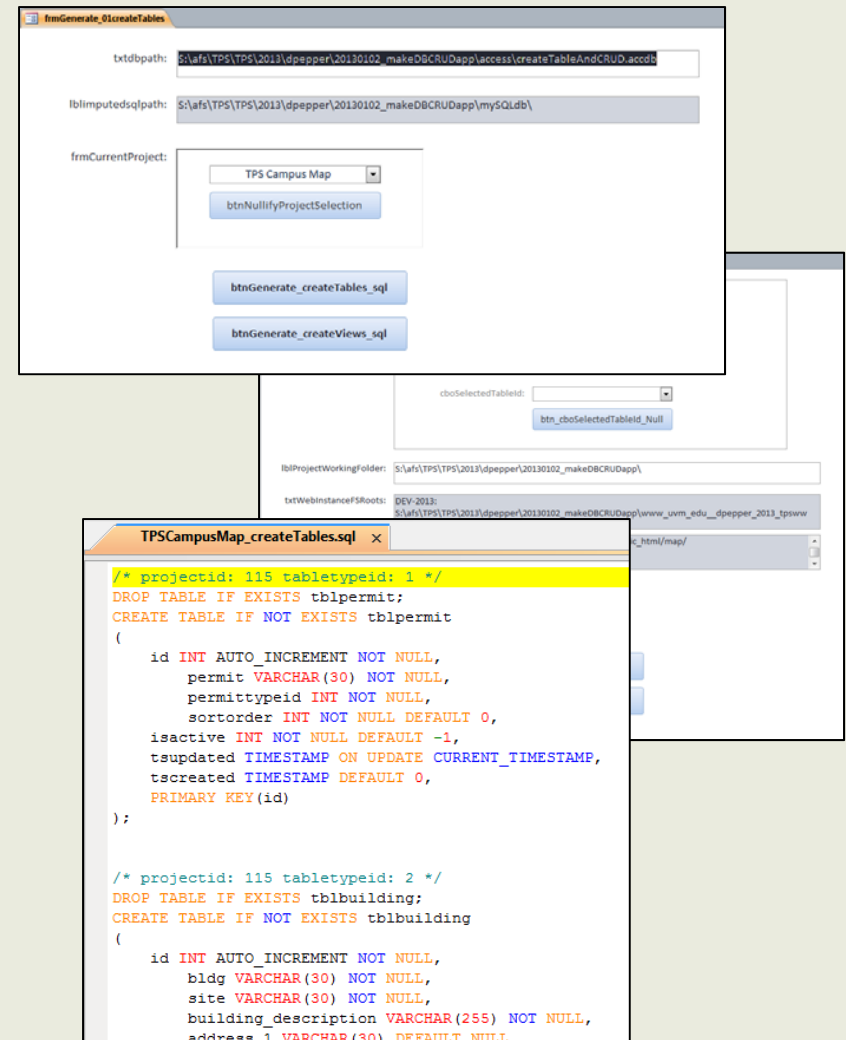
- Received ArcGIS Polygons for Redstone Campus:
  - Parking Lots
  - Buildings
  - Roads
  
- Received tabular data in Excel/CSV:
  - Parking Lots
  - Buildings
  - Roads



# PROJECT TIMELINE

## January 15th, 2013

- Began “DB CRUD” Application
  - “CRUD” stands for “Create, Read, Update, and Delete”
    - basic SQL DML operations
- Application’s main features
  - Model database designs with standardized features
    - IDs, timestamps, data type design patterns (e.g. FK-LU)
  - Generate “Create Table”, “Create View” scripts



# PROJECT TIMELINE (JANUARY 15TH, 2013 CONTINUED)

## January 15th, 2013 (continued)

- “DB CRUD” Application (continued)
  - Application’s main features (continued)
    - Generate standard web interfaces to database
      - Indexes: application, context
      - CRUD files
        - mixture of PHP, Javascript, HTML, CSS
  - Allows rapid development of web database applications
  - Maintains data in enterprise database
    - MySQL Server: webdb.uvm.edu,
    - Accessible to both web and desktop
- Ended “DB CRUD” App development mid-June, 2013

edit id	permit <sup>id</sup>	parking <sup>id</sup>	delete
<a href="#">Edit 1</a>	Resident-Blue <sup>2</sup>	UHEIGHTS SOUTH PARKING LOT <sup>58</sup>	<a href="#">Delete</a>
<a href="#">Edit 2</a>	Resident-Blue <sup>2</sup>	MAT PARKING LOT <sup>62</sup>	<a href="#">Delete</a>
<a href="#">Edit 3</a>	Resident-Blue <sup>2</sup>	HARRIS MILLIS PARKING LOT <sup>66</sup>	<a href="#">Delete</a>
<a href="#">Edit 4</a>	Employee-White <sup>9</sup>	HARRIS MILLIS PARKING LOT <sup>66</sup>	<a href="#">Delete</a>
<a href="#">Edit 5</a>	Employee-White <sup>9</sup>	MAT PARKING LOT <sup>62</sup>	<a href="#">Delete</a>
<a href="#">Edit 6</a>	Employee-White <sup>9</sup>	UHEIGHTS SOUTH PARKING LOT <sup>58</sup>	<a href="#">Delete</a>
<a href="#">Edit 8</a>	Employee-White <sup>9</sup>	ADAMS BUILDING PARKING LOT <sup>55</sup>	<a href="#">Delete</a>
<a href="#">Edit 9</a>	Employee-White <sup>9</sup>	UHEIGHTS NORTH PARKING LOT <sup>56</sup>	<a href="#">Delete</a>
<a href="#">Edit 10</a>	Employee-White <sup>9</sup>	UHEIGHTS STREET NORTH PARKING LOT <sup>57</sup>	<a href="#">Delete</a>
<a href="#">Edit 11</a>	Employee-White <sup>9</sup>	UHEIGHTS STREET SOUTH PARKING LOT <sup>60</sup>	<a href="#">Delete</a>
<a href="#">Edit 12</a>	Employee-White <sup>9</sup>	LL FAC/STAFF PARKING LOT <sup>61</sup>	<a href="#">Delete</a>
<a href="#">Edit 13</a>	Employee-White <sup>9</sup>	UHEIGHTS SOUTH 3 PARKING LOT <sup>64</sup>	<a href="#">Delete</a>
<a href="#">Edit 14</a>	Employee-White <sup>9</sup>	GUTTERSON FACULTY/STAFF PARKING LOT <sup>69</sup>	<a href="#">Delete</a>
<a href="#">Edit 16</a>	Resident-Blue <sup>2</sup>	Gutterson Garage <sup>97</sup>	<a href="#">Delete</a>



# PROJECT TIMELINE

## **June 26th, 2013**

- Began process of building Campus Map Publishing System Prototype
  - Geospatial Specialist Teoman “Teo” Korkmaz joined project working on the design of the map prototype in ArcGIS
    - focusing on integrating database assets and ArcGIS assets
  - David Pepper focusing on rest of project
    - working on architecture, storage layer and project management

# **TPS CAMPUS MAP PUBLISHING SYSTEM**

# TPS CAMPUS MAP PUBLISHING SYSTEM

## Campus Map Publishing System Prototype

- Storage design in “DB CRUD” generator system
  - Data in MySQL server: webdb.uvm.edu,  
Database: DPEPPER\_1 (dev)
  - Web interfaces on dev website:
    - <http://www.uvm.edu/~dpepper/2013/map/standard/index.htm>
- Access database linked to map database tables in MySQL
  - tpsCampusMap.accdb
    - S:\afs\TPS\TPS\2013\dpepper\20130626\_makeCampusTPmapPrototype\tpsCampusMap.accdb
- ArcGIS project “CampusTPmap\_prototype”
  - Located on “TPSGraphics” workstation at:
    - C:\2013\dpepper\20130703\_makeCampusTPmapPrototype\CampusTPmap\_prototype.mxd



# TPS CAMPUS MAP PUBLISHING SYSTEM

## Architecture of an ArcGIS Project

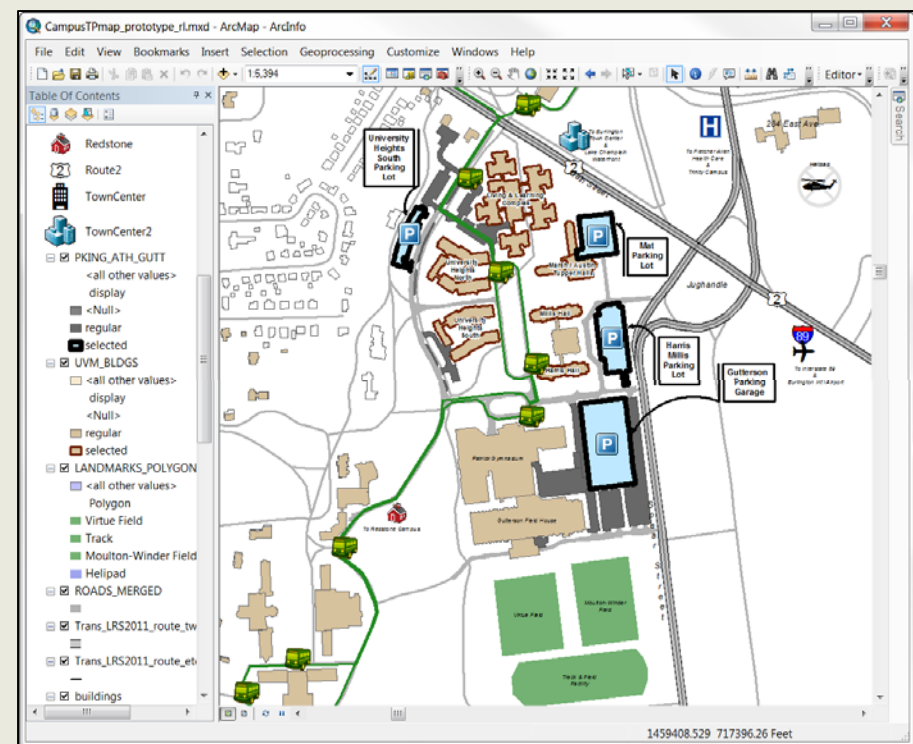
- Layers like a hamburger
- Assets linked to location on earth
- Basic ArcGIS asset types:
  - Polygons (parking lots, buildings)
  - Points (locations of bus stops, bike racks)
  - Lines (bus routes)



# TPS CAMPUS MAP PUBLISHING SYSTEM

## How the ArcGIS Project is Designed (top-bottom)

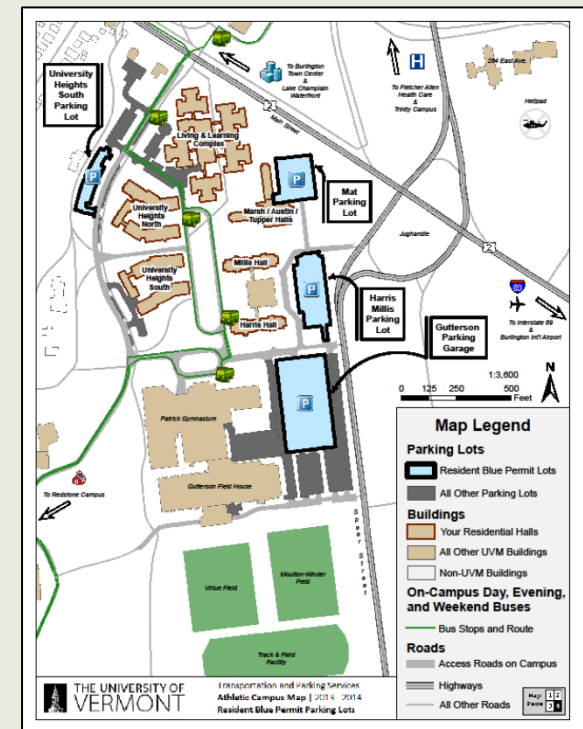
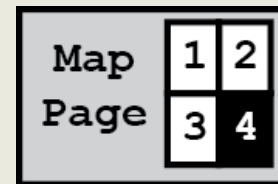
- Points of Interest
- Bus Layer
  - Stop Points
  - Route Lines
  - Parking Lots
- Parking Lots
  - dynamically formatted (“regular” or “selected”) according to Selected Permit
- Buildings
  - dynamically formatted (“regular” or “selected”)
- Background Assets
  - Roads
  - Base map



# TPS CAMPUS MAP PUBLISHING SYSTEM

## Map Layout Design Choices

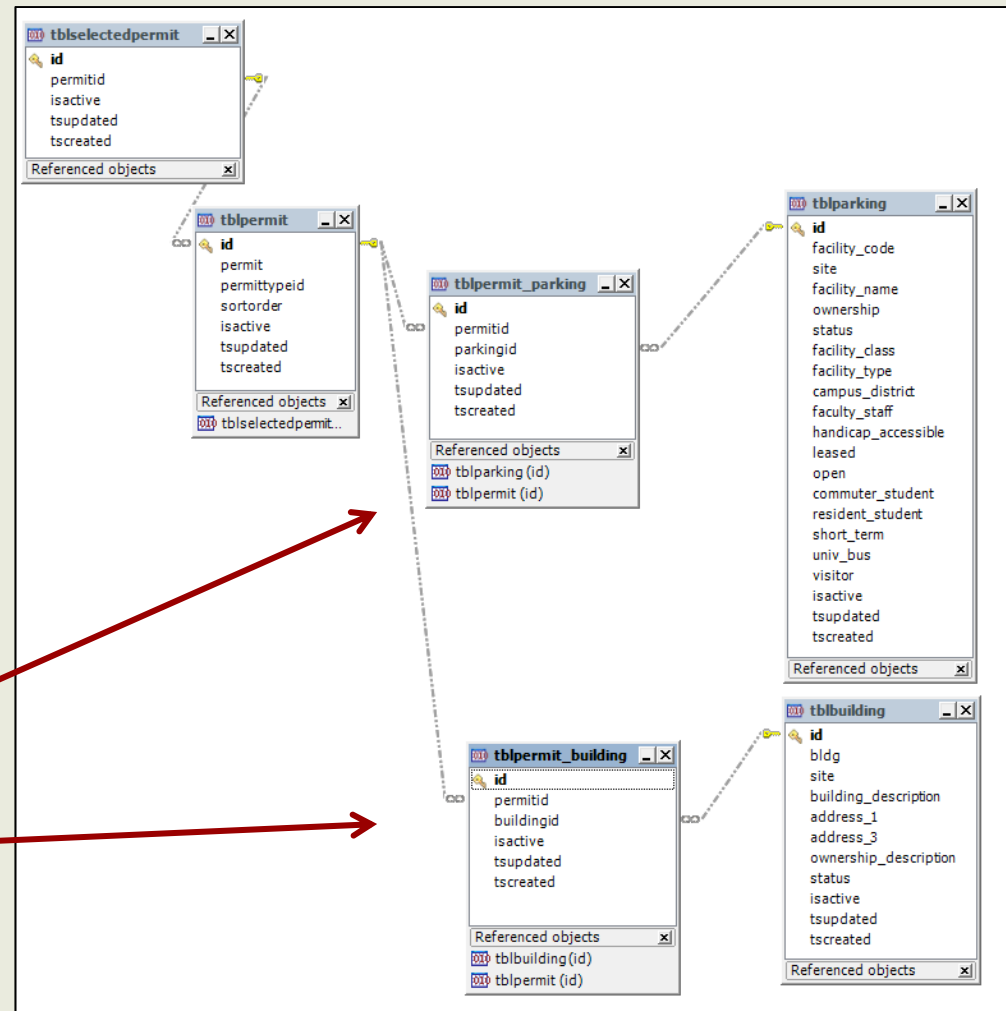
- North is up
  - a.k.a. “phone-view”
- UVM divided into 4 sub-campuses
  - Each is a separate map page
  - fully formatted (i.e. legend, title, etc.)
- Formatted for printing
  - In Color, but designed for B/W printing
  - 8.5” x 11”



# TPS CAMPUS MAP PUBLISHING SYSTEM

## Map Data Design

- **tblselectedpermit** data temporarily establishes scope of deliverable by storing selected permit IDs
- M-M tables permanently store relationships between permits and parking lots and buildings
  - **tblpermit\_parking**
  - **tblpermit\_building**



# TPS CAMPUS MAP PUBLISHING SYSTEM

## Data Interfaces

- Indexes
- Create (“Add”)
- Read (a.k.a. “Select”/”View”)
- Update (“Edit”)
- Delete

View Permits-Parking Lots x

www.uvm.edu/~dpepper/2013/map/standard/tblpermit\_parki

[MAP Index](#)

- [Standard Index](#)
- **Permits-Parking Lots** ([Add New](#))

edit id	permit <sup>id</sup>	parking <sup>id</sup>	delete
<a href="#">Edit</a> 1	Resident-Blue <sup>2</sup>	UHEIGHTS SOUTH PARKING LOT <sup>58</sup>	<a href="#">Delete</a>
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[HTML](#) [CSS](#)



# FUTURE PLANS

# FUTURE PLANS

- Finished...
  - Maps by Permit Type (Resident-Blue, Employee-White) ✓
- Next?...
  - ESRI-to-Google Workflow
  - More Specific Use-cases
- Present Project Results to Stakeholders
  - TPS ✓
  - Campus Planning ✓
  - ???
- Consider Project to Build Full System
  - Benefits
    - Customized Deliverables for Stakeholders
    - Revenue?
  - Costs
    - Support

# FUTURE PLANS

- David Pepper  
davidpepperit@gmail.com



**David Pepper**

David is an information systems specialist with a communications design background.  
Burlington, Vermont Area | Information Technology and Services


Current	Spindle and Widget, LLC, University of Vermont
Previous	Johns Hopkins Bloomberg School of Public Health, Apex Systems, IntraSpek, Inc.
Education	University of Baltimore

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- Teoman Korkmaz  
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**Teoman Korkmaz**

MSc Regional and Urban Planning (RICS accredited) - LSE, with experience seeking employment  
Burlington, Vermont Area | Architecture & Planning

Current	University of Vermont
Previous	London School of Economics, Trucost, Groundwater & Environmental Services, Inc.
Education	London School of Economics and Political Science

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