Trail Map Proposal for the Town of Middleton- 7/13/2020

Christopher Archuleta and Josh Riebe

Target User Profile:

Name & Position: Jade Thomson, Data Scientist

Description: Jade recently moved into the Madison area to pursue a career opportunity offered by a regional employer. She wants to walk the trails in the area, including those in the Town of Middleton. She would like to have a single website from which she can plan her walks, meaning that it would include information already provided on the town website as well as instructions on how to access the trails. The interactive map would be a great medium for visually representing all of this information. For example, the map would differentiate between trail types, allowing her to identify trail surfaces in advance. She would be able to plan her walks according to her trail preferences without having to navigate between different pages on the Town website.

Use Case Scenario: From the Town website homepage, Jade navigates to Pope Farm Conservancy-North page on her mobile device. She is able to read about the amenities offered at the conservancy and access the interactive map via a link. When she accesses the map in this manner, it loads so that the extent covers only the conservancy and its immediate vicinity. She can identify the trails according to their type, as indicated by a collapsible legend. She also notices that the amenity locations within the conservancy are represented on the map. After deciding to visit the conservancy, she clicks the “Directions via Google” button on the bottom of her screen. This links her to the Google Maps website, where she can click the directions button to start navigating to the parking lot on Blackhawk Rd.

Use Case Scenario: Jade wishes to walk her dog on a trail in the Town of Middleton. After reading the description of the interactive trail map on the Town website, she realizes that the map has the information she needs. So she clicks the link to the interactive map, which shows the entire town. She clicks on the collapsible legend, expanding it. There are a number of overlays that she can toggle, including "Trails Where Dogs Are Allowed". She clicks that area of the legend to toggle the layer, making the dog-friendly trails and their respective parks apparent. She clicks on Ed Tallard Park and the affordance reading "Directions via Google" appears at the bottom of her mobile device. She clicks on that button to start the navigation process on Google Maps.

Requirements Document

Representation		
1	Maps	One interactive map of the Town of Middleton; one static map of the Town of Middleton; one static map for each major park and conservancy; one static map for each proposed trail conglomerate (emphasize trail connectivity); one static map for dog-friendly trails
2	Basemap	Town of Middleton data; full extent of town on static map; minimal styling of land cover/landscape (emphasis on map features/less distracting)
3	Trails	Symbolized by lines; differentiated by trail type; omission of trail manager for public maps, included for commission maps; proposed trails will have distinct symbolization
4	Roads	Symbolized by lines distinct from trails
5	Contour lines	Symbolized by dashed lines; distinct index contours

6	Parks	Stylized polygons; differentiate between town parks and other parks
7	Parcels	Stylized polygons
8	Points of Interest	Unique icons based on feature type (parking, water, etc.); new icons when needed and pre existing town icons when applicable
9	Selections	Highlighted features and translucent periphery
10	Scale	Map generalizes in response to small cartographic scale/zoom out (affects number of total features shown); map detail at higher zoom levels matches level of detail in static maps of individual parks/conservancies
11	Labels	Differentiated according to feature type (1 typeface for built environment; 1 typeface for natural features)
12	Responsive Design	Collapsed legend is default; directions button occupies bottom of the screen (Thumb friendly)

Interaction

1	**Trail, Park, & POI Selection**	Retrieve links to park and trail webpages; initiate navigation Selected parks are highlighted
2	**Layer Toggle**	Overlay proposed trails, dog friendly trails, etc. onto map, which are not shown by default
3	**Legend**	Collapsible on interactive map
4	**Directions**	Link to Google Maps on all “Directions” buttons

Non-functional Requirements		
1	**Utility**	Trail map will have improved utility largely through overlay feature (more information on map than currently exists); One map for all of Town (not split in two)
2	**Availability**	Users can access map in standalone link or via park specific links
3	**Updates**	Inserting new trails into map when they are constructed
4	**Usability**	Number of clicks to navigation reduced by maintaining Google Maps links on park webpages (maintain efficiency); “directions” button at top of visual hierarchy on interactive map (increase learnability); Highly visible feedbacks (selection highlight); Colorblind-friendly scheme;
5	**Modifiability**	Modifications can be made through code and/or vector art files

Payment (Student Cartographer Hourly Pay is $10.50 at Cartography Lab for reference)

Proposal - 5 hours

Data Sifting - 15 hours

Interactive - 50 hours

Ground-Truthing - 10 hours

Static Map Creation - 50 hours

Google Maps Directions/Pin Locations - 3 hours

Approximate Total Hours: 133 hours = $1,396.50 ~ $1,400