Planning & designing a cross-platform interface

XC Nordic

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CONTENTS

Background, task & purpose

Cross-country skiing is a popular sport that is enjoyed throughout the world. People of different backgrounds and levels participate in the sport recreationally and competitively. Throughout the season there are races and workshops put on by different sponsors. This information is often difficult to find and isn't presented in a way that is easy or pleasing to access. Quite often, it's even impossible to find up-to-date information about the current conditions.

Tracked cross country ski trail
Valley View, New York USA
January 2010

Task
The task was to plan and design an interactive application that would work with two mediums: the web and the iPhone.

Purpose
The purpose of creating this application was to provide a way for cross country skiers to access and share information, get wax recommendations, and check current conditions.

The idea behind the web site was to create a space where information about the sport could be accessed and shared. It provides a way for users to find out what's going on and to help them plan their adventures and seek out new places.

The iPhone application is designed to fit in with the web site, but it serves an entirely different purpose. Its function is much more active. It is a tool to be used to get information about current conditions in order to help the user choose the correct wax for the conditions and make decisions about where to ski based on surface conditions, trail status (whether trails have been groomed or tracked), and the weather.

DISCOVERY

Through my competitive analysis, I identified features in existing applications and began to think about whether or not similar features would be implemented in my own application. Through the personas, I was able to focus on my users and think about how they would use the application and identify the features they would want. My competitive analysis and personas were instrumental in developing my concept, defining the scope of my application, and establishing the content.

Competitive analysis

Since there isn't already an application for cross country skiing, my competitive analysis looked at apps that exist for downhill skiers and other GPS and social media applications that have some of the same functionality that I envisioned XC Nordic having.

APPS REVIEWD

GPS & SOCIAL NETWORKING APPS
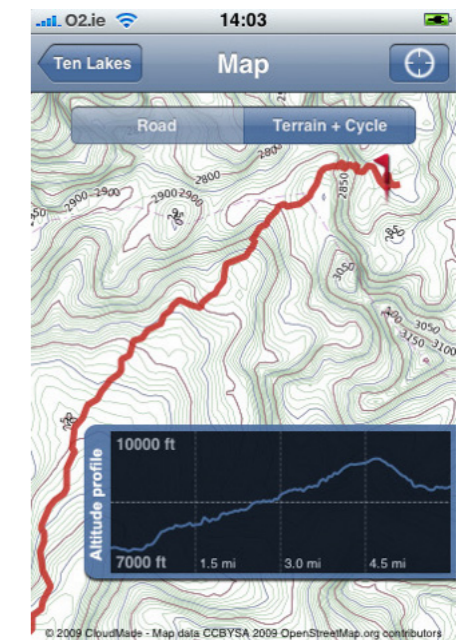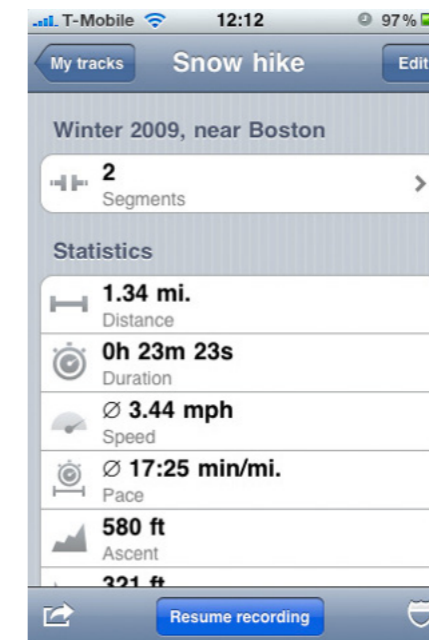
Trails

Everytrail

DOWNHILL SNOW REPORT APPS

REI Snow Report

Competitive analysis

TRAILS
iPhone app

DESCRIPTION	The trails application allows users to record their and save their routes (or tracks).
AUDIENCE	Outdoor enthusiasts, especially hikers and cyclists.
FEATURES	• Terrain and road maps • Elevation profile • Records GPS tracks, duration, speed and distance • Export options (email and Everytrail)
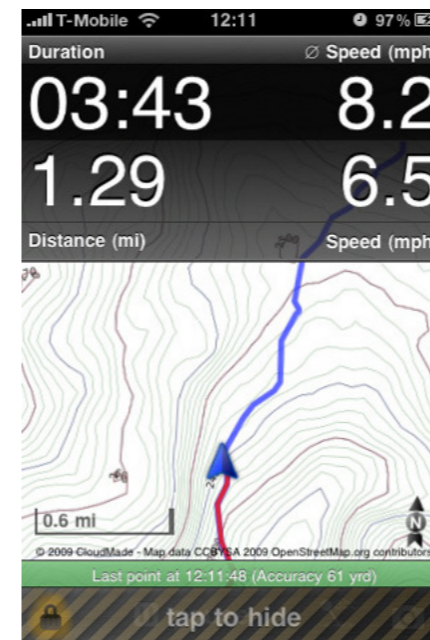
Screenshots showing app features. Above: recoding routes, hike statistics, terrain map and altitude profile. Left: altitude and speed graph.

Competitive analysis

EVERYTRAIL

iPhone app and web site

DESCRIPTION

Everytrail is a collection of user uploaded journeys in the form of photos, maps, and descriptive text.

AUDIENCE

Outdoor enthusiasts.

FEATURES

- Upload and view user content
- Share journeys with friends
- Comment, rate, and review
- Maps and trails
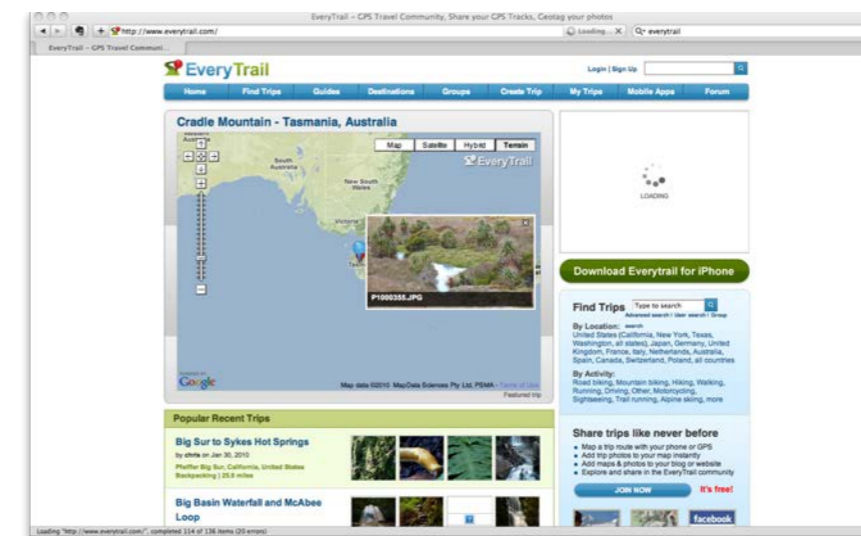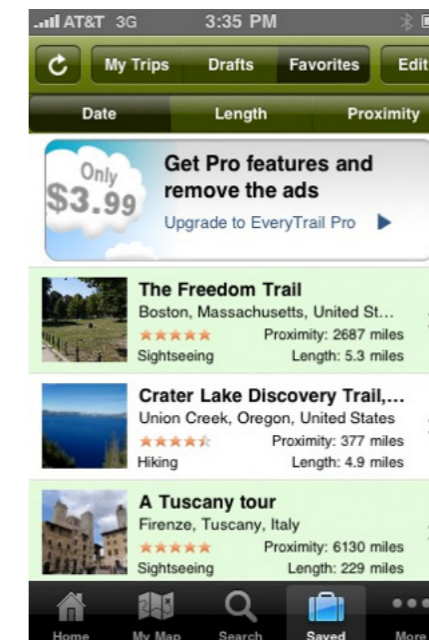
Competitive analysis

REI SNOW APP

iPhone app

DESCRIPTION	REI Snow app lets downhill skiers check conditions, trails, weather, and see current discussions about their favorite spots from Twitter.
AUDIENCE	Downhill skiers and snow boarders.
FEATURES	• Check conditions (current and five day forecast) • Get resort, lift, and trail status • View trails • Manage resorts
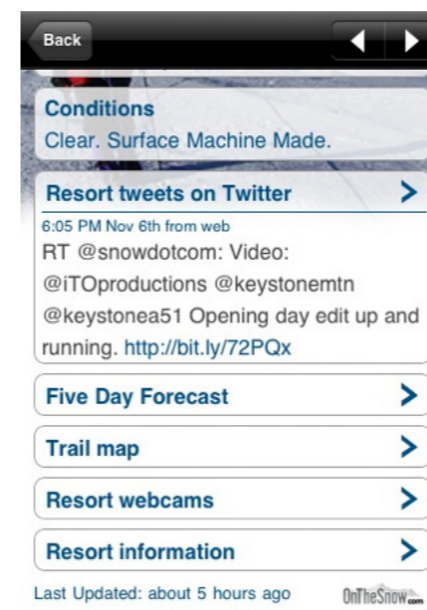
Personas

The personas looked at five different people and took into consideration their experience with cross country skiing, how they might use the application, and what features they would find most important.

AMH
Recreational Skier
Classic & Skate

ZJW
Competive/Recreational
Classic & Skate

FTK
Recreational/Training
Skate

PCM
Recreational skier
Classic

KFS
Recreational skier
Skate

Personas

AMH » AGE 28

EXPERIENCE   Recreational Skier
TECHNIQUE   Classic & Skate
TRAIL USE   Tracked, open, and groomed

BACKGROUND   He's been skiing for about 26 years, since he was 2 years old. He primarily skis in the classic style on tracked and open trails. When he can find groomed trails, he likes to mix in a little bit of skating. He skis as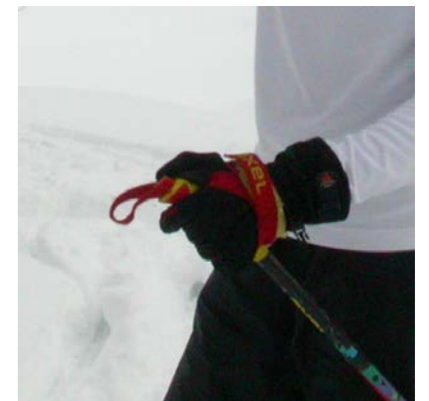 often as possible because it's great exercise and he enjoys the scenery. For the past 5 years he has gone out about 2-3 times a week, for about 1 to 2 hours.

USE   He wants to be able to access trail conditions (amount of base, fresh snow, groom status) and maps showing distances and contours, so he can check the conditions before he heads out and be able to pre-plan his routes. He also wants to be able to access user reviews to get the opinions of other skiers and find new places.

Important features

from the web
- get directions
- upload and view photos, videos, and tracks
- mark and save favorite places
- write reviews
- download trail data to mobile
- search listings
- rss feed for events
- see what's nearby
- pet friendliness

from the app
- wax recommendation
- current weather conditions
- access favorite places
- overviews
- trail maps
- difficulty

Personas

ZJW » AGE 29

EXPERIENCE   Competive/Recreational
TECHNIQUE   Classic & Skate
TRAIL USE   Tracked, open, and groomed

BACKGROUND   He started skiing when he was about 8 years old, he's competed in classic and skate events. These days he's more of a recreational skier who enjoys skating. He likes to stop take pictures on occasion and record his routes so he can see them on a map.

USE   He loves to get some skiing in whenever he can. He would use the app to quick-check his favorite places to get updates about the trails and weather so he can find the best places to ski and invite his friends to go along. With his competitive background, he's really interested in the events and loves the fact he can subscribe to them via RSS, and maybe even catch a clinic or two. Lately he's gotten into cataloguing his trips and is really excited to find a site where he can share all his favorite ones with his buddies.

Important features

from the web
- upload and view photos, videos, and tracks
- download trail data to mobile
- rss feed for events
- mark and save favorite places
- write reviews
- search listings

from the app
- wax recommendation
- trail conditions
- current weather conditions
- access favorite places
- view location on trails via gps

Personas

FTK » AGE 32

EXPERIENCE   Recreational/Training
TECHNIQUE   Skate
TRAIL USE   Groomed

BACKGROUND   An Iron Man Competitor who lives in Central New York, but travels frequently to the Adirondacks where he trains for competition in the off-season by skiing groomed trails at the Olympic Sports Complex in Lake Placid.

USE   He uses it mostly to check the conditions and get a wax recommendation before he heads out to ski. That way he knows exactly how to prepare.

Important features

from the web
- get directions
- upload and view tracks
- view elevation data
- terrain maps
- trail difficulty ratings
- mark and save favorite places
- download trail data to mobile
- rss feed for events
- access training articles and tips
- professional gear reviews

from the app
- wax recommendation
- trail conditions
- current weather conditions
- access favorite places
- view location on trails via gps

Personas

PCM » AGE 55

EXPERIENCE   Recreational skier
TECHNIQUE   Classic
TRAIL USE   Tracked

BACKGROUND   He's been skiing for over 40 years in the traditional style (track) with antique wooden skis that require the right kind of wax depending on the temperature. He considers himself a recreational skier but he has blood lines in competitive/ racing. He's never raced except… one time in Lake Placid when he whipped 2 young whipper snappers in the traditional track style vs their supposedly faster skating style. It was written up in the local lake placid news, and he had a Guinness afterward in celebration. He skis once a week… as long as there's snow.

USE   He's most interested in up to the minute conditions, so he doesn't up the wax selection.

Important features

from the web
- get directions
- trail difficulty ratings
- mark and save favorite places
- download trail data to mobile
- rss feed for events
- access training articles and tips
- recreational gear reviews

from the app
- wax recommendation
- trail conditions
- current weather conditions
- access favorite places
- view location on trails via gps

Personas

KFS » AGE 29

EXPERIENCE   Recreational skier
TECHNIQUE   Skate
TRAIL USE   Groomed

BACKGROUND   She's been skiing for 10 years in the skating style.
               When she's around snow, she usually skis 2-3 times
               per week. She loves the excercise and scenery, and
               has been considering entering some races.

USE   She's most interested in the wax recommendations,
               trail conditions, and weather conditions. She also
               loves to look at the routes on a map before hand so
               she can get an idea of what the terrain is like and
               decide which places might be best to ski at.

Important features

from the web
• get directions
• trail difficulty ratings
• mark and save favorite places
• download trail data to mobile
• rss feed for events
• access training articles and tips
• recreational gear reviews

from the app
• wax recommendation
• trail conditions
• current weather conditions
• access favorite places
• view location on trails via gps

TRANSFORMING

In this stage, the concepts were finalized and set for the web site and iPhone application. The information architecture established the structure and flow of the content and the visual look and feel was defined through wireframes and screen mock-ups. Finally, use cases present the application in use by different users in specific contexts.

Concept
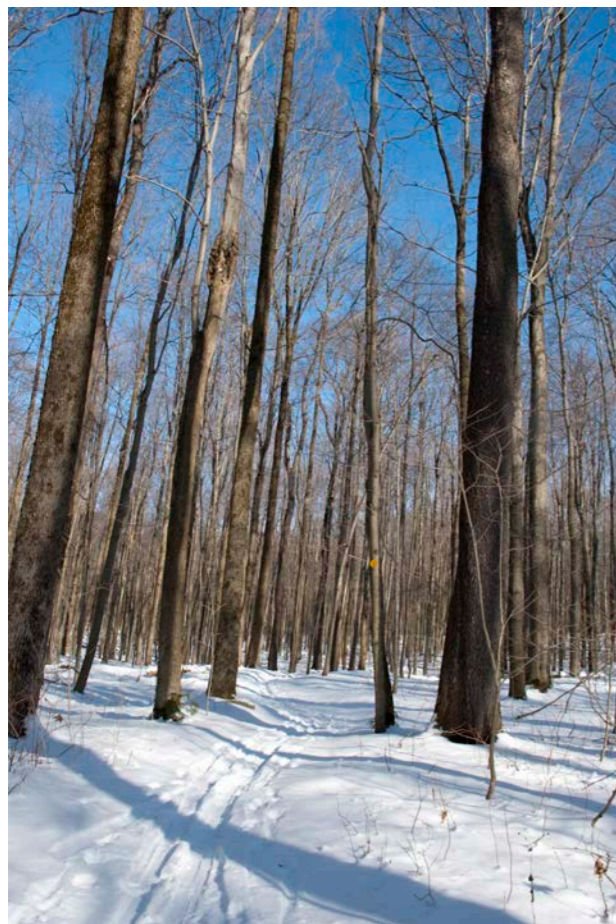
Traditional cross country ski trail
Bear Swamp State Forest, New York USA
December 2009

WEB SITE

The idea behind the web site is to provide a way for cross country skiing enthusiasts and professionals to connect, share their experiences, and access information related to the sport.

It would have a user driven space called "places" where users can upload photos, GPS tracks, write reviews, and bookmark their favorite locations.

The other sections would be *events*, *training*, and *gear*. Skiers would have access to up-to-date info about what's happening in cross country skiing and a resource where they can access information to help them improve their technique.

IPHONE APP

The iPhone application ties in to the "places" section of the web site. This section of the site is unique for each user — it's the place where they can log and mark their favorite places, upload photos and trail data, comment and share with friends. Users can sync their favorite places with their iPhone to get wax recommendations and maps for when they head outdoors.

The primary purpose is to provide users with information about the conditions and equip them with the right wax for their day out on the trails.

The secondary purpose of the application is to provide a reference for the users in the form of maps. The application provides access to terrain and trail maps so the user can get a sense of the kind of terrain they will encounter, see where the trails are, and pinpoint their location via GPS.

LF4 Light green
-32°C to -10°C | -25°F to 14°F

LF6 Light blue
-12°C to -6°C | 10°F to 21°F

LF6 Violet
-12°C to -6°C | 10°F to 21°F

LF8 Red/pink
-4°C to +1°C | 25°F to 34°F

LF10 Yellow
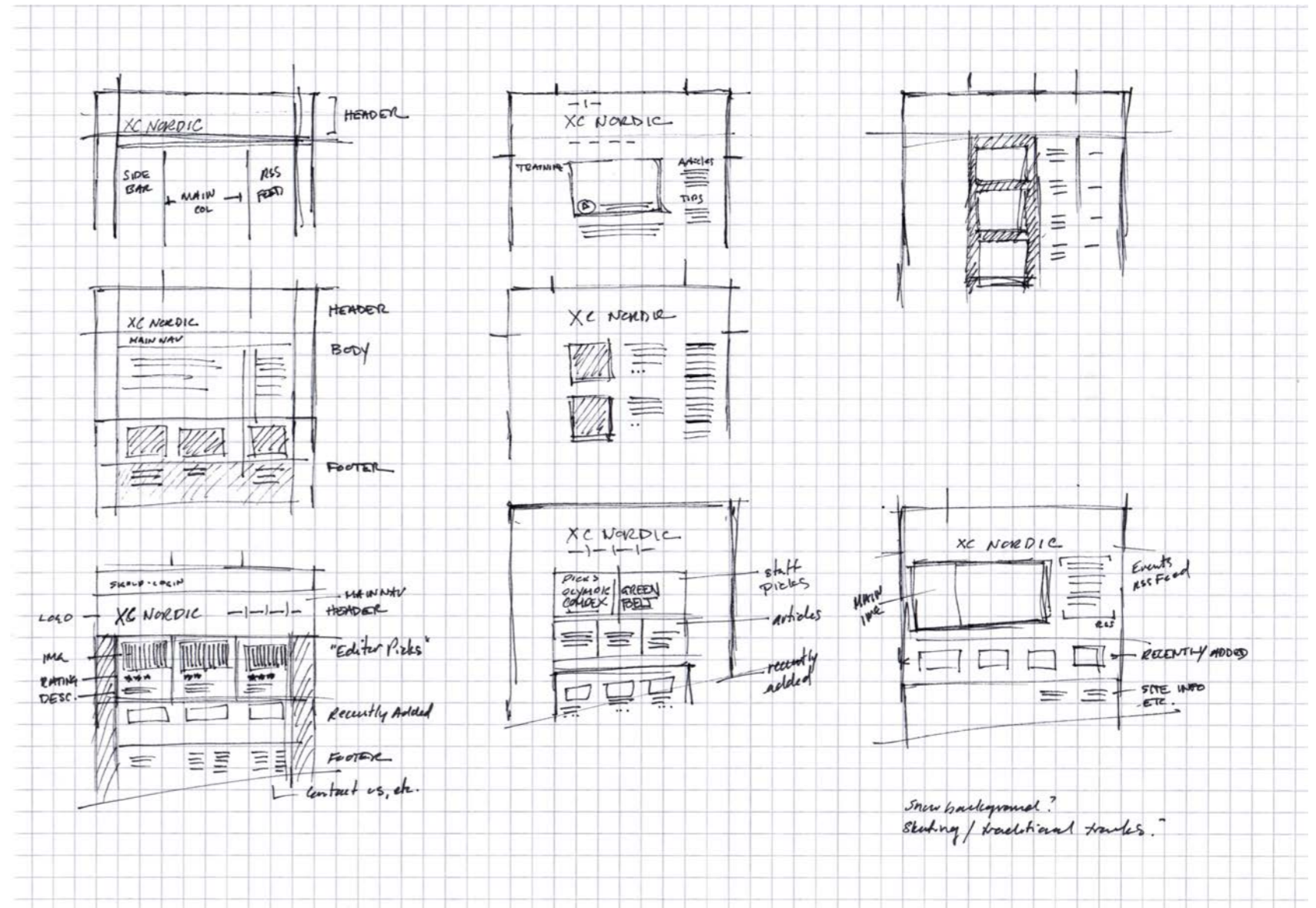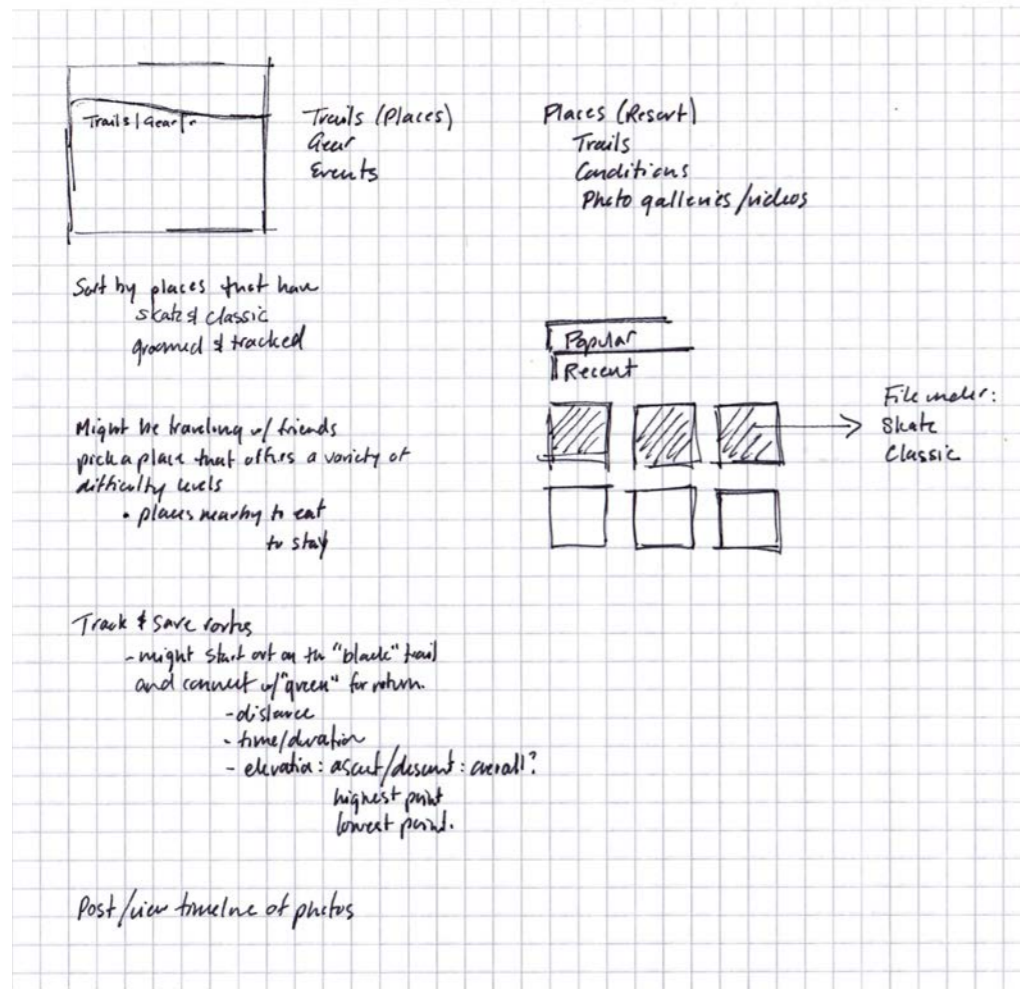0°C to +10°C | 32°F to 50°F

Swix LF waxes

Swix wax chart showing colors and related temperature ranges that the wax is suited to. The primary purpose of the iPhone application is to provide this information to the user in order to help them to prepare for the conditions.

Web site information architecture

login

home

users can login to their xc nordic account at any time, from any screen.

places

information about cross country ski places. allows users to get directions, contact info, view photos, preview trails create their own treks and more.

place
trails
maps
conditions
wax

editor picks

favorites

search

content
text and hyperlinks
photos
maps (terrain and trail)
gps trails

functions
forms to upload content, post comments, and write reviews. twitter stream showing live info about a particular place (limited to editor picks).

events

calendar of upcoming events and specific details (including registration info) relating to races and clinics/workshops.

races

workshops

content
text and hyperlinks
photos
calendar
forms (interactive and static)

functions
download content
submit registration forms

training

information related to training and technique (form, balance, stretching, poling v1 and v2).

tips and techniques

articles/links

exercises and workouts

content
text and hyperlinks
images
videos
pdfs

functions
download content
(instructions, etc)

gear

reviews and recommend-ations for skis, boots, bindings, poles and other essential gear.

racing

sport and recreational

editor picks/award winners

content
text and hyperlinks
images

Web site wireframe sketches

These early wireframe sketches explore possible design variations for displaying the site content.

Web site screen mock-ups
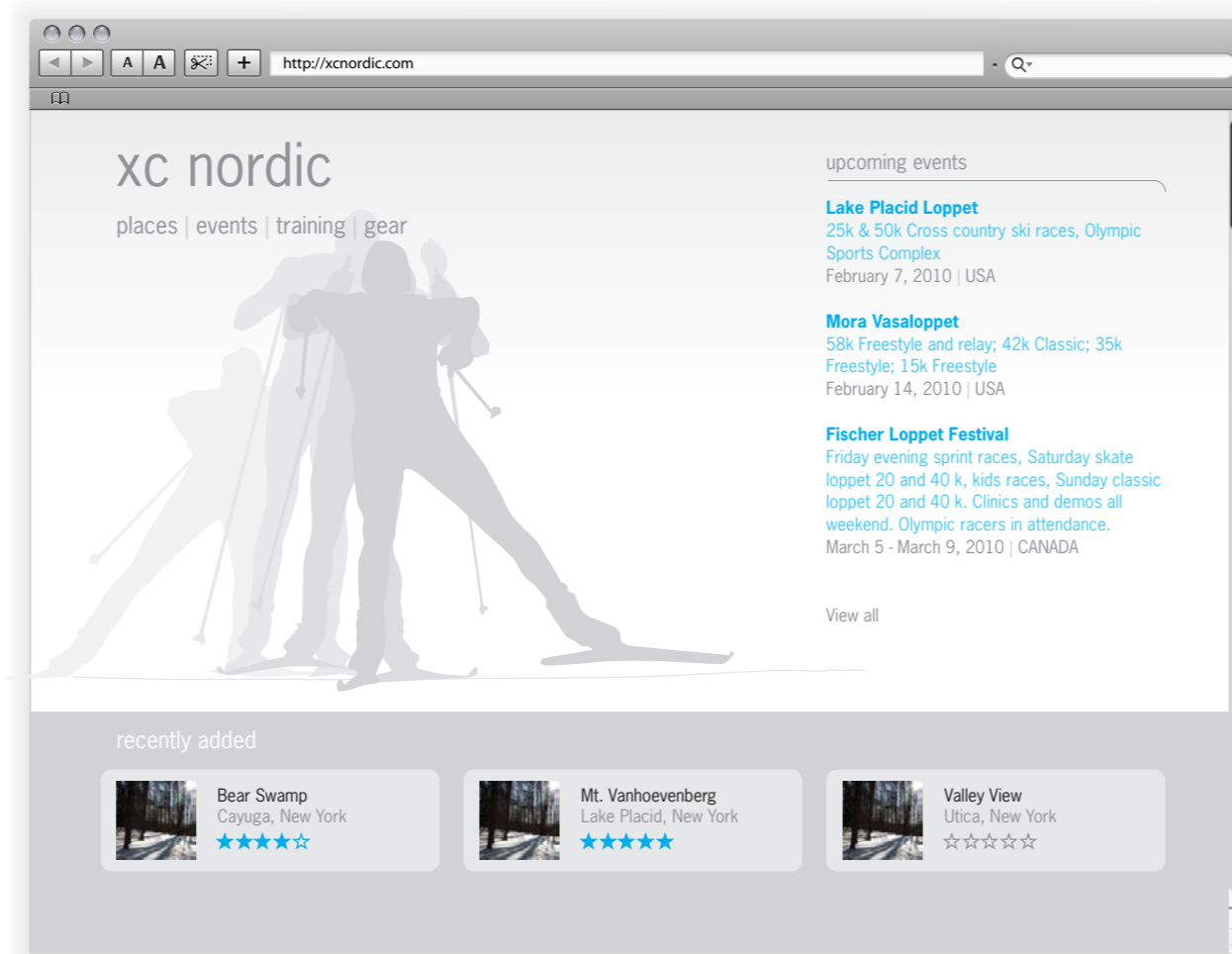
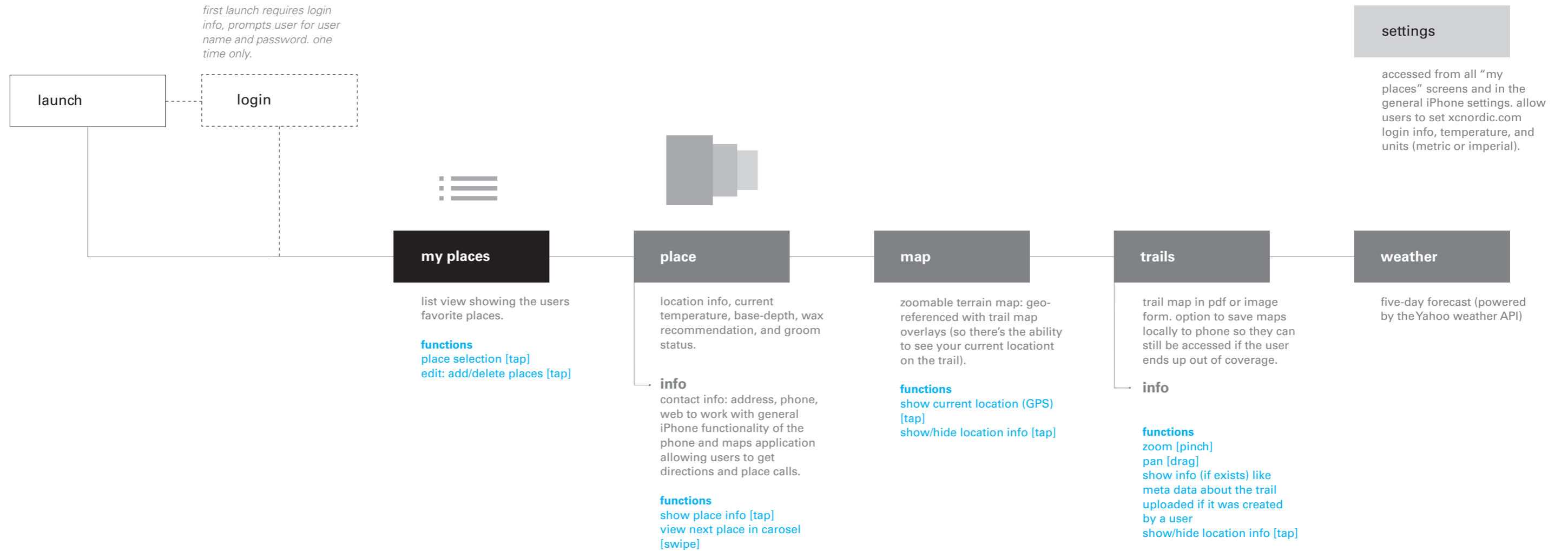Sample XC Nordic home page showing main navigation, upcoming events via RSS, and places recently added by other users.
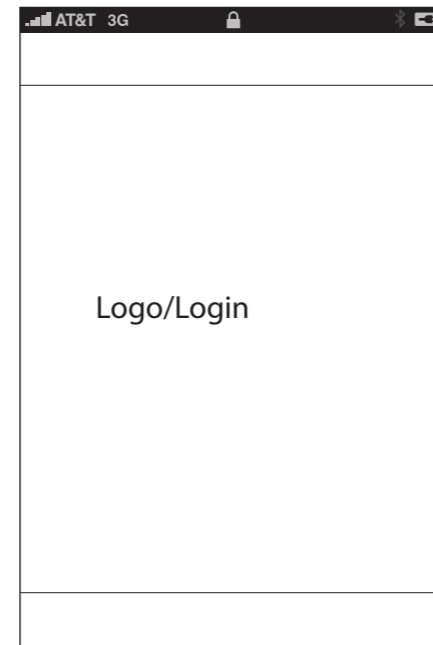
Web site screen mock-ups
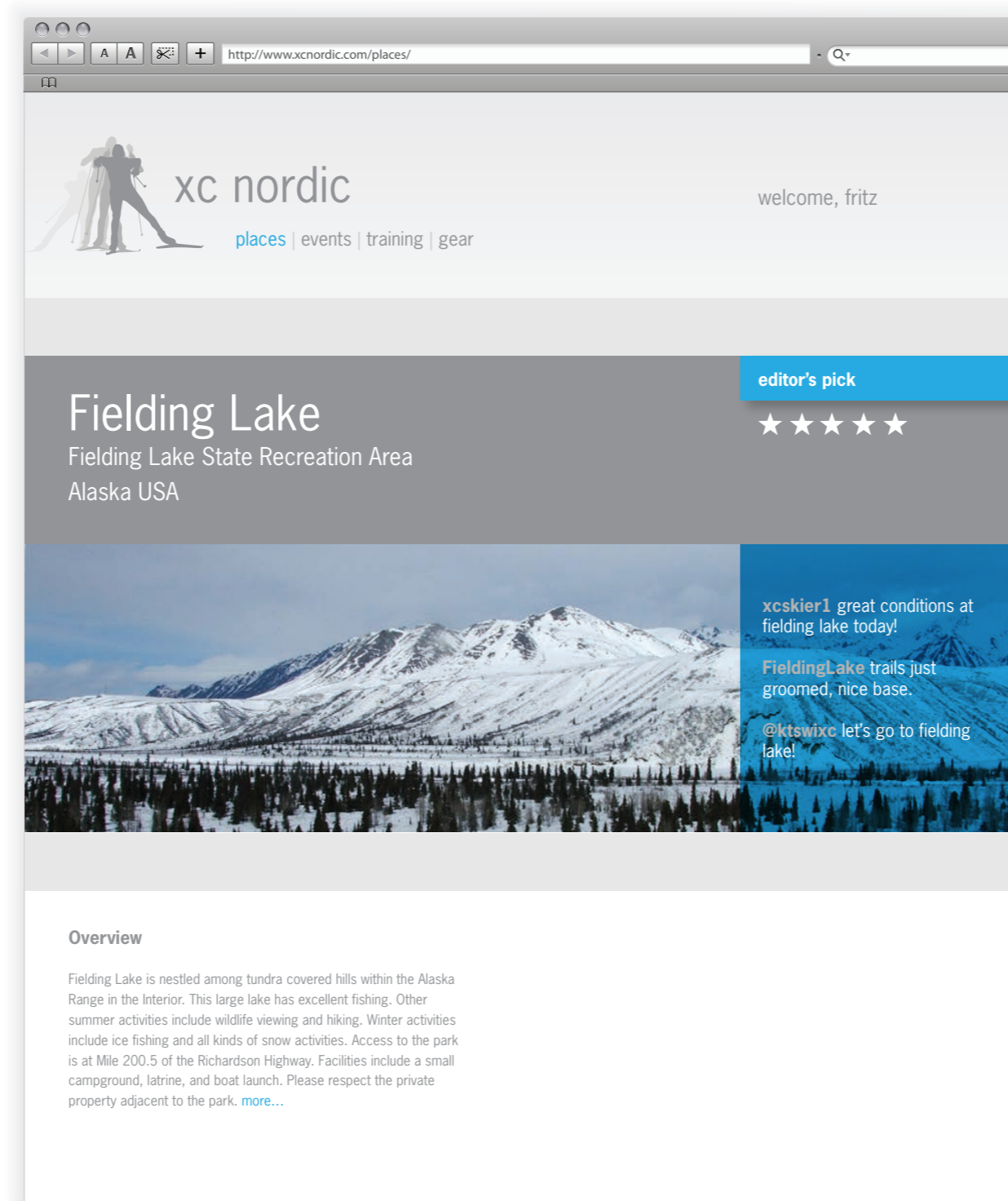
Sample *places* page showing editor's pick, twitter feed related to the location shown, and an overview of the area.

Uses cool colors and a clean technical layout to capture the coldness of winter and the technicality of cross country skiing technique.
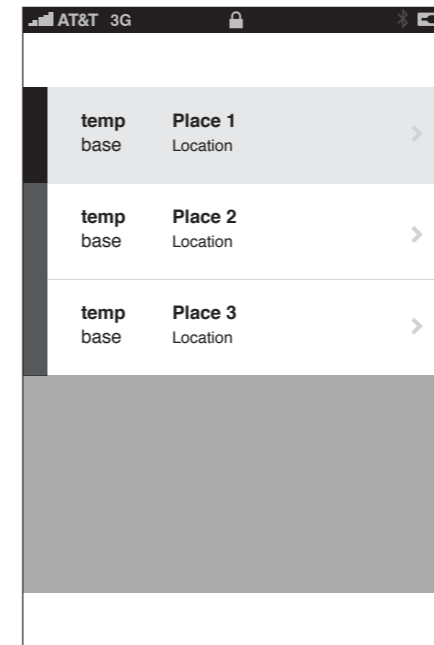
iPhone information architecture

first launch requires login info, prompts user for user name and password. one time only.

settings

accessed from all "my places" screens and in the general iPhone settings. allow users to set xcnordic.com login info, temperature, and units (metric or imperial).

launch	login

my places

list view showing the users favorite places.

functions
place selection [tap]
edit: add/delete places [tap]

place

location info, current temperature, base-depth, wax recommendation, and groom status.

info
contact info: address, phone, web to work with general iPhone functionality of the phone and maps application allowing users to get directions and place calls.

functions
show place info [tap]
view next place in carosel [swipe]

map

zoomable terrain map: geo-referenced with trail map overlays (so there's the ability to see your current locationt on the trail).

functions
show current location (GPS) [tap]
show/hide location info [tap]

trails

trail map in pdf or image form. option to save maps locally to phone so they can still be accessed if the user ends up out of coverage.

info

functions
zoom [pinch]
pan [drag]
show info (if exists) like meta data about the trail uploaded if it was created by a user
show/hide location info [tap]

weather

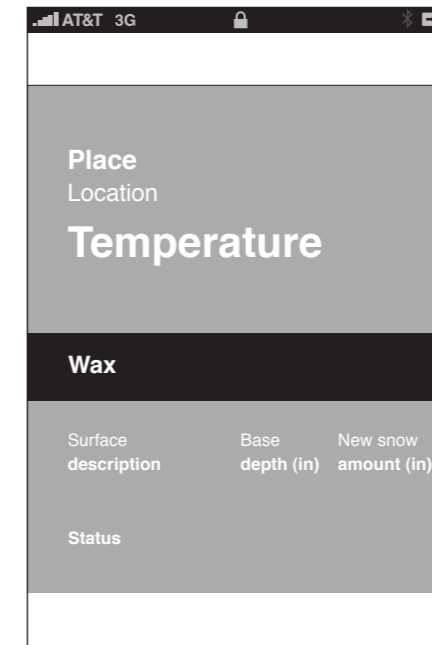five-day forecast (powered by the Yahoo weather API)

iPhone wireframes

These wireframes describe the general structure of the application and the information that is shown on each screen. They also indicate the visual hierarchy of the content.
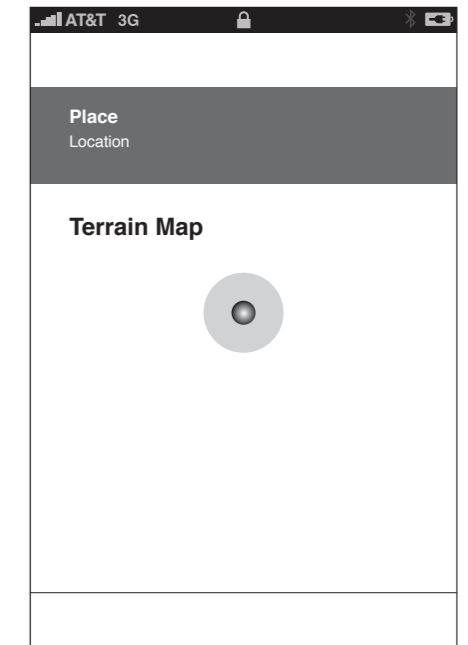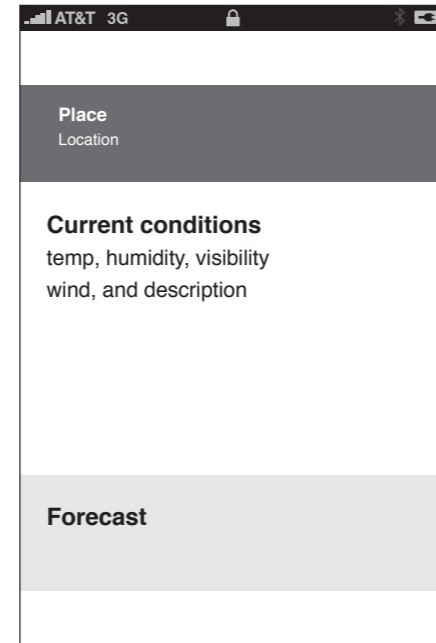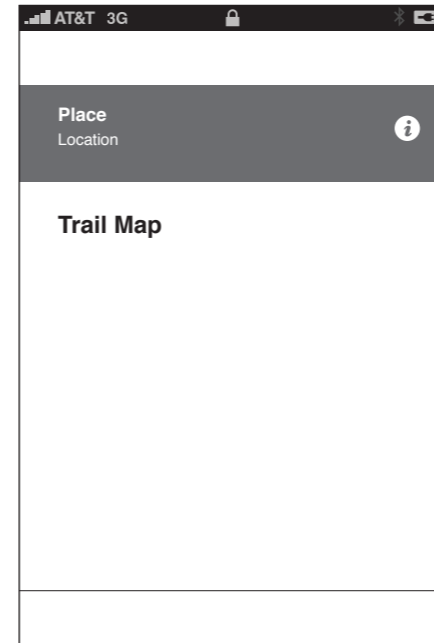
Logo/Login

Login

temp base	**Place 1** Location
temp base	**Place 2** Location
temp base	**Place 3** Location

My places

Place
Location
Temperature

Wax

Surface description · Base depth (in) · New snow amount (in)

Status

Place

Place
Location

Terrain Map

Place
Terrain map

iPhone wireframes

⊿ AT&T 3G 🔒 ✳ 🔋	⊿ AT&T 3G 🔒 ✳ 🔋	⊿ AT&T 3G 🔒 ✳ 🔋	⊿ AT&T 3G 🔒 ✳ 🔋

Place
Location

Current conditions
temp, humidity, visibility
wind, and description

Forecast

Place
Location   ⓘ

Trail Map

Place
Location

Trail listings
distance, difficulty, name

xcnordic.com

Temperature

Units

Place
Weather
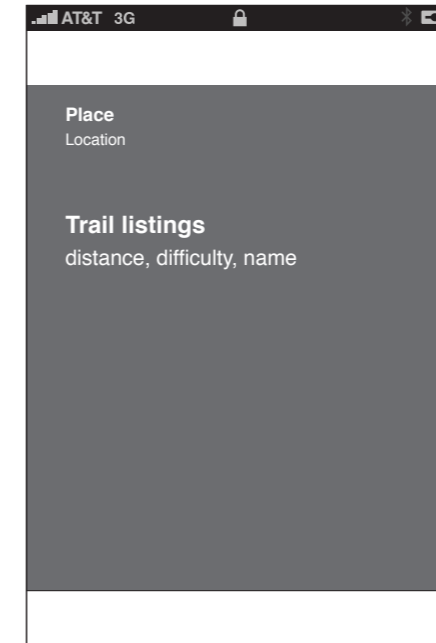
Place
Trail map

Place
Trail listing

Settings
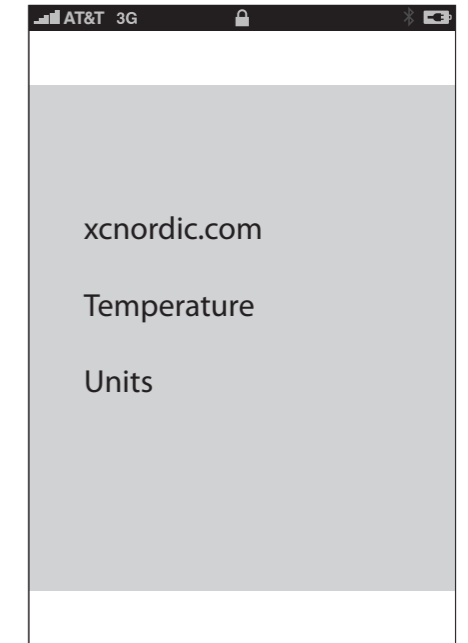
iPhone screen mock-ups
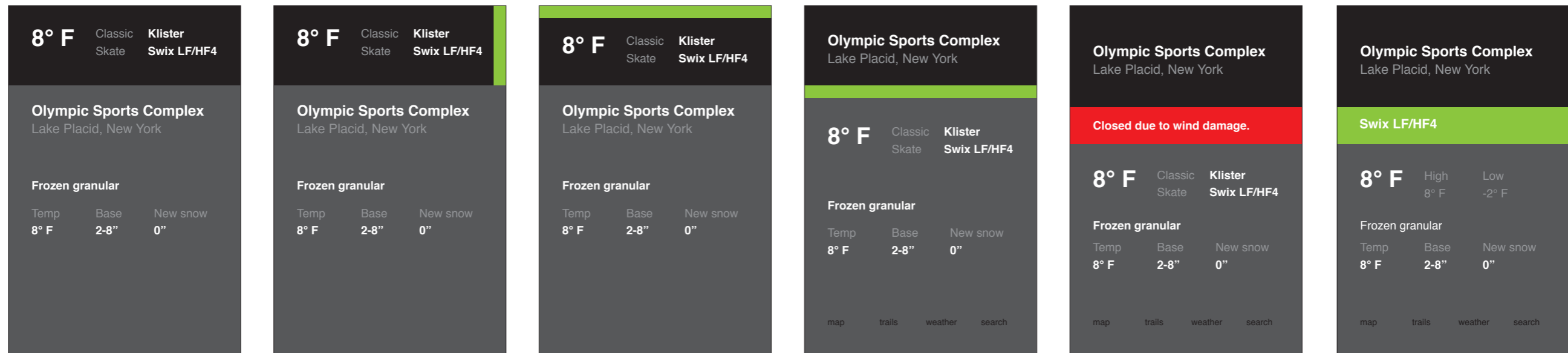
These screen mock-ups explore variations for the *place* view, focusing on the positioning of the wax recommendation information. Information shown includes: location, temperature, surface conditions, and wax recommendations.

iPhone screen mock-ups

After main page, app loads favorite places with picture from each location in the background. Places are flipped through.

List view of favorite places with open/closed status, tap for detailed info page

Favorites

Olympic Complex
Lake Placid, New York
closed

McCauley Mountain
Old Forge, New York
open | new snow

Green Belt
Utica, New York
open | base depth:

Valley View
Utica, New York
open | base depth:

My Places

Olympic Complex
Lake Placid, New York
closed

McCauley Mountain
Old Forge, New York
open | new snow

Green Belt
Utica, New York
open | base depth:

Valley View
Utica, New York
open | base depth:

Olympic Sports Complex
Lake Placid, New York

8° F

Swix LF/HF4

Valley View
Utica, New York

12° F

Swix LF/HF4

Surface	Base	New snow
Frozen Granular	2-8"	0"

Place name & location
Current temperature

Wax recommendation

Surface conditions

List view/comparrison of favorite places

Color bar shows wax recommendation (more details available on next page, but usually color is enough)

8° F 2-8"	**Olympic Complex** Lake Placid, New York
18° F 2-8"	**McCauley Mountain** Old Forge, New York
19° F 2-4"	**Green Belt** Utica, New York
19° F 2"	**Valley View** Utica, New York

Temperature and base depth (units can be set to celsius in the application settings)

Olympic Sports Complex
Lake Placid, New York

8° F

Swix LF/HF 4

Olympic Sports Complex
Lake Placid, New York

Swix LF/HF4

8° F

Frozen granular

Temp	Base	New snow
8° F	2-8"	0"

map   trails   weather   search

Valley View
Utica, New York

Swix LF/HF4

12° F

Surface	Base	New snow
Frozen granular	2-8"	0"

map   trails   weather   search

McCauley Mountain
Old Forge, New York

Swix LF/HF4

10° F

Use cases

The use cases use two profiles from the persona section to create scenarios in which XC Nordic might be used. The purpose of this was to consider where and how the application might be used by different users, to uncover potential problems, and to make sure that the design was supporting the purpose of the application.

USE CASE 1	ZJW
	Experienced skier in classic and skating techniques. Skies recreationally and competitively.

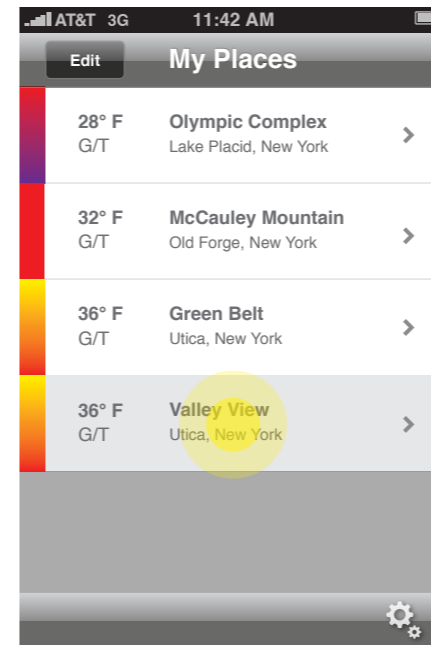| USE CASE 2	FTK
	Experienced with the skating technique. Skies primarily for recreation and training.

Use case 1

ZJW

The scenario

Zac is at the office getting ready to take his lunch. It's a gorgeous, sunny day out and there's still plenty of snow for skiing. He is thinking about running home during lunch to grab his skis so he can head out to Valley View after work.

He launches the XC Nordic application on his iPhone to quickly check the conditions at Valley View. He takes note of the temperature, wax recommendation, and surface conditions. Since he just put a coat of LF10 on his skis the other day, he decides they should be fine for the conditions and runs home to pick them up.
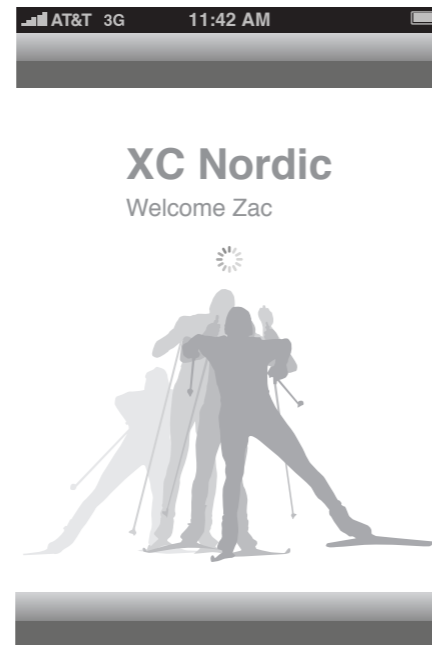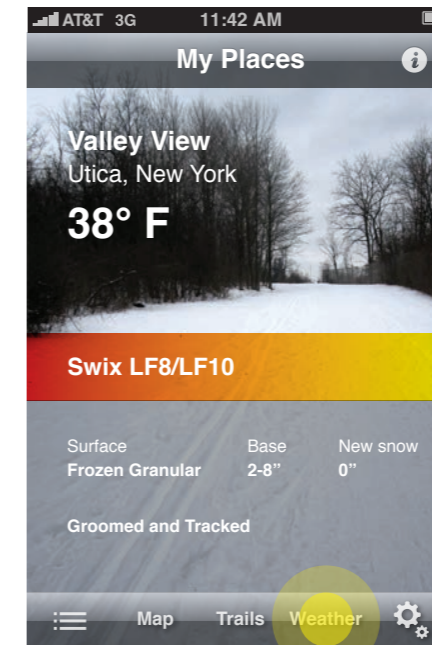
XC Nordic

Welcome Zac

Launches the application. It's been launched before, so it welcomes him and goes right to the "My Places" list view screen. He doesn't have any trouble loading it over his 3G network.

My Places

Edit

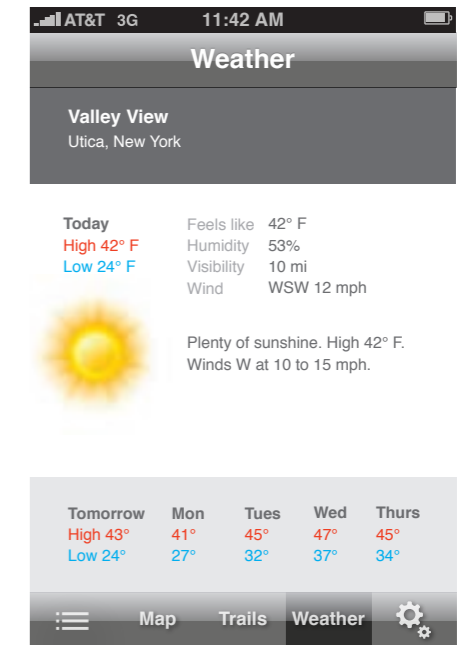|		
28° F G/T	Olympic Complex Lake Placid, New York	>
32° F G/T	McCauley Mountain Old Forge, New York	>
36° F G/T	Green Belt Utica, New York	>
36° F G/T	Valley View Utica, New York	>

From the "My Places" list view screen, he taps on "Valley View" to get more information about one of his favorite spots to ski.

At a glance he can see that the trails have been groomed and tracked, the recommended wax is red or yellow, and the current temperature.

My Places

Valley View
Utica, New York
38° F

Swix LF8/LF10

Surface
Frozen Granular

Base
2-8"

New snow
0"

Groomed and Tracked

Map   Trails   Weather

He quickly notes the temperature, wax recommendation, and surface conditions. Since he just put a coat of LF10 on his skis a couple days ago, he decides he'll be okay with the wax he has on and he runs home to pick up his skis during lunch.

Weather

Valley View
Utica, New York

Today		
High 42° F	Feels like	42° F
Low 24° F	Humidity	53%
	Visibility	10 mi
	Wind	WSW 12 mph

Plenty of sunshine. High 42° F. Winds W at 10 to 15 mph.

	Tomorrow	Mon	Tues	Wed	Thurs
High	43°	41°	45°	47°	45°
Low	24°	27°	32°	37°	34°

Map   Trails   Weather

Quickly checks the weather just to see what the rest of the week is looking like. He might have another chance to get out and ski after work, but he might need to get a new coat of wax on his skis before heading out.
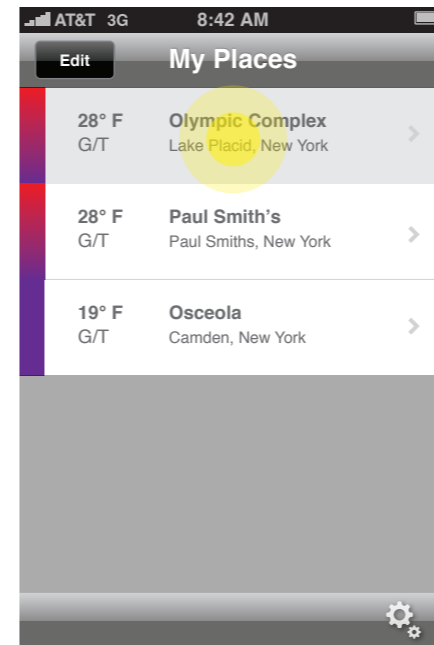
Use case 2

FTK

The scenario

Fritz is heading up to camp for the weekend to get some skiing in. He wants to make sure he takes the right waxes up with him and that the Sports Complex will be open, so he uses the XC Nordic Application to pull up their contact info and give them a quick call just to double check their hours and make sure they're open.

He uses the weather screen to get a quick glimpse of the five day forecast and plan which waxes to take with him.
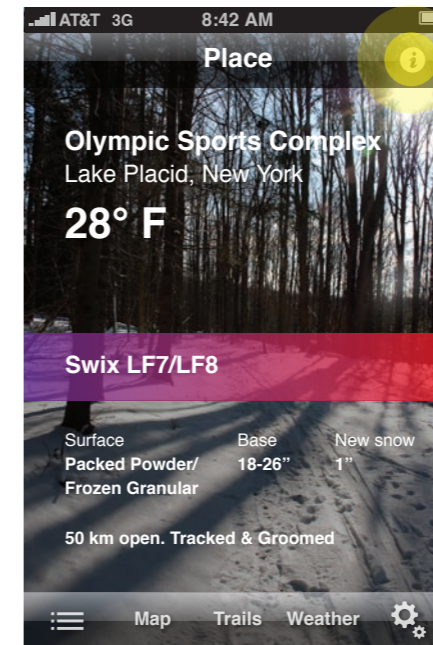
While he's at the complex, on the trails, he checks the trail map to see where the red and black trails connect.
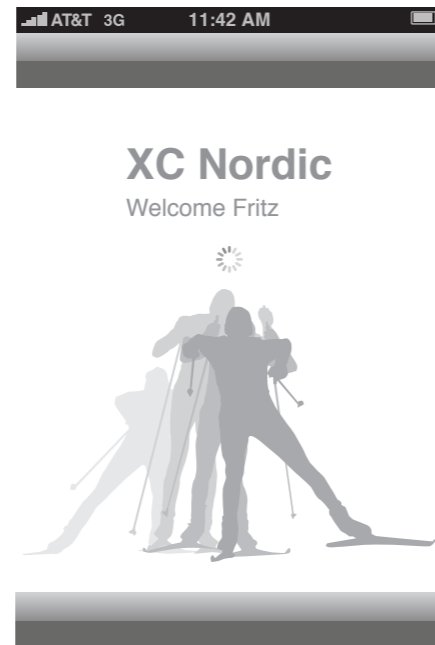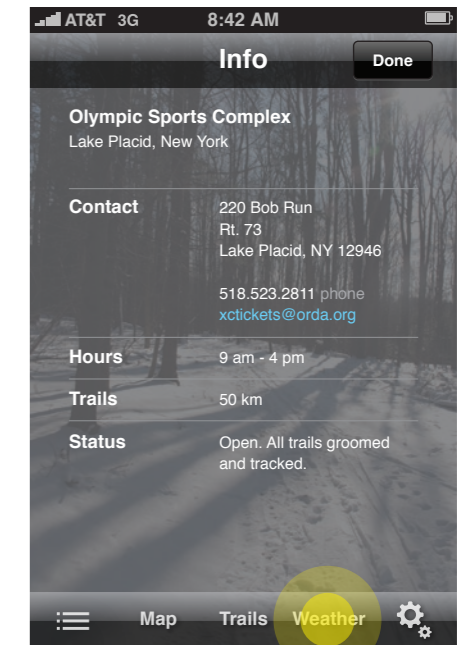
	AT&T 3G	11:42 AM	

XC Nordic

Welcome Fritz

Launches the application. It's been launched before, so it welcomes him and goes right to the "My Places" list view screen.

	AT&T 3G	8:42 AM	

Edit   **My Places**

28° F G/T	**Olympic Complex** Lake Placid, New York	>
28° F G/T	**Paul Smith's** Paul Smiths, New York	>
19° F G/T	**Osceola** Camden, New York	>

Taps on the Olympic Complex to access its information.

	AT&T 3G	8:42 AM	

Place

Olympic Sports Complex
Lake Placid, New York

28° F

Swix LF7/LF8

Surface	Base	New snow
Packed Powder/ Frozen Granular	18-26"	1"

50 km open. Tracked & Groomed

≡   Map   Trails   Weather

Checks out the current conditions. It's warming up but still looks like some great skiing: nice surface, good base, a bit of new snow, and all trails are open and have been tracked and groomed.

	AT&T 3G	8:42 AM	

Info   **Done**

Olympic Sports Complex
Lake Placid, New York

Contact	220 Bob Run Rt. 73 Lake Placid, NY 12946
	518.523.2811 phone xctickets@orda.org
Hours	9 am - 4 pm
Trails	50 km
Status	Open. All trails groomed and tracked.

≡   Map   Trails   Weather

Double checks the Sports Complex hours and taps on the phone number to call the complex to make sure they're open.

Use case 2

FTK continued…
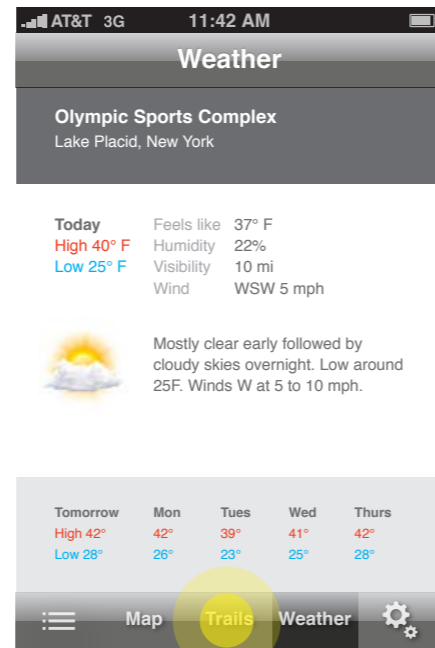
Checks the five day weather forecast to see if there's going to be much variation in the temperature so he can decide what waxes to take north with him.


At the Sports Complex, he pulls up the trail map.

The 3G network might go out of reach, but he'll still be able to access the maps if they're saved locally on the phone.

Issue: memory

He hides the location tab, so he has more screen space to view the map, and zooms in to the trails map to get a closer look at how the red and black trails connect. There's a cutoff there that he might take advantage of.
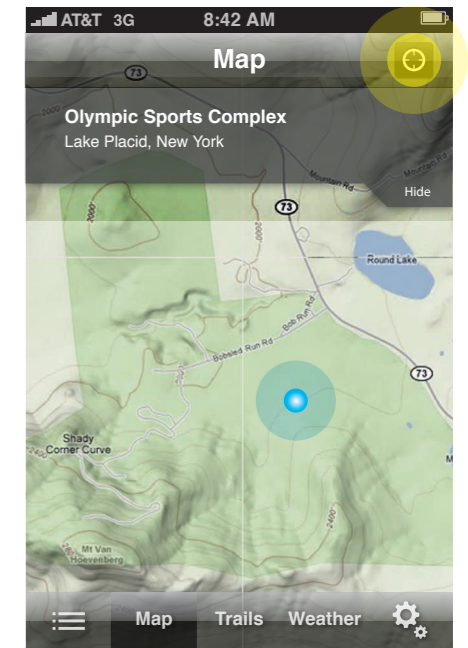
Checks his location on the map to see where he is and view the terrain.

Potential problem: loss of signal

MAKING

The final design keeps with the iPhone style by making use of system typefaces. It breaks some conventions by using text as icon and implements additional functionality on the *map* and *trails* screens by allowing the user to show or hide the location information describing the place that is currently being viewed.
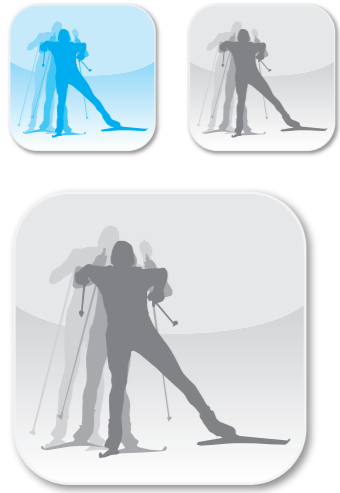
iPhone application design

iPhone application design

Design specifications

XC Nordic application icon

Login & welcome

Status bar
Black
Always visible

Welcome message
Helvetica bold 32 pt
Helvetica regular 18 pt
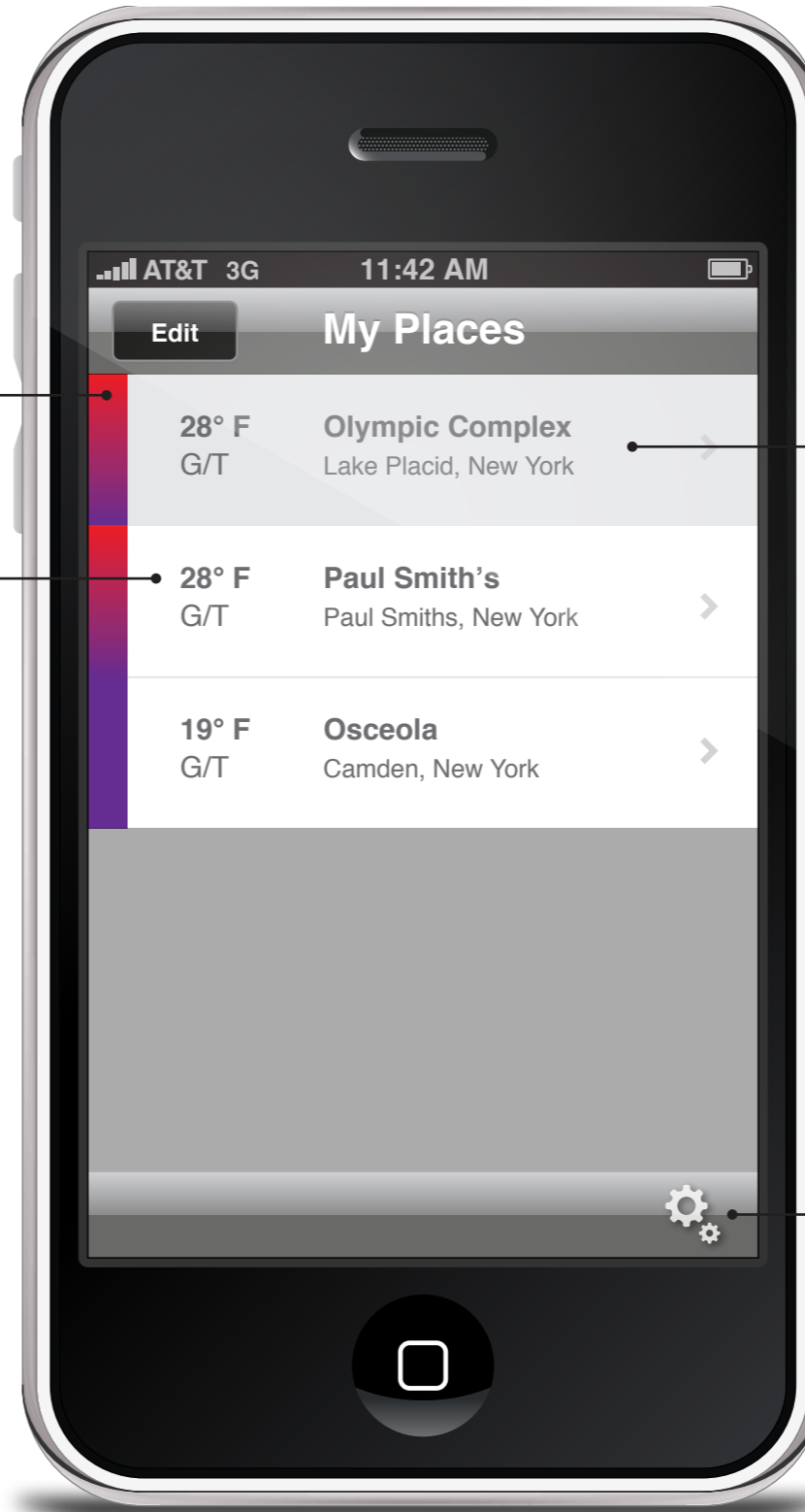
XC Nordic

Welcome Fritz

Screen
320 × 480 px

Tab & navigation bars
320 × 42 px
Black
Opacity 60%

Design specifications

My Places

Wax
Gradient indicates a range
18 × 72 px

Temperature
Groom/track status

Helvetica bold & regular 14 pt

Place listing & location
320 × 72 px

Helvetica bold 14 pt
Helvetica regular 12 pt

Gray 60%

Icons
Button area 64 × 42 px

White
Opacity 80%
Drop shadow black,
multiply, 50%

Text as icon
Helvetica bold 14 pt

AT&T 3G   11:42 AM

Edit   **My Places**

28° F   **Olympic Complex**
G/T   Lake Placid, New York

28° F   **Paul Smith's**
G/T   Paul Smiths, New York

19° F   **Osceola**
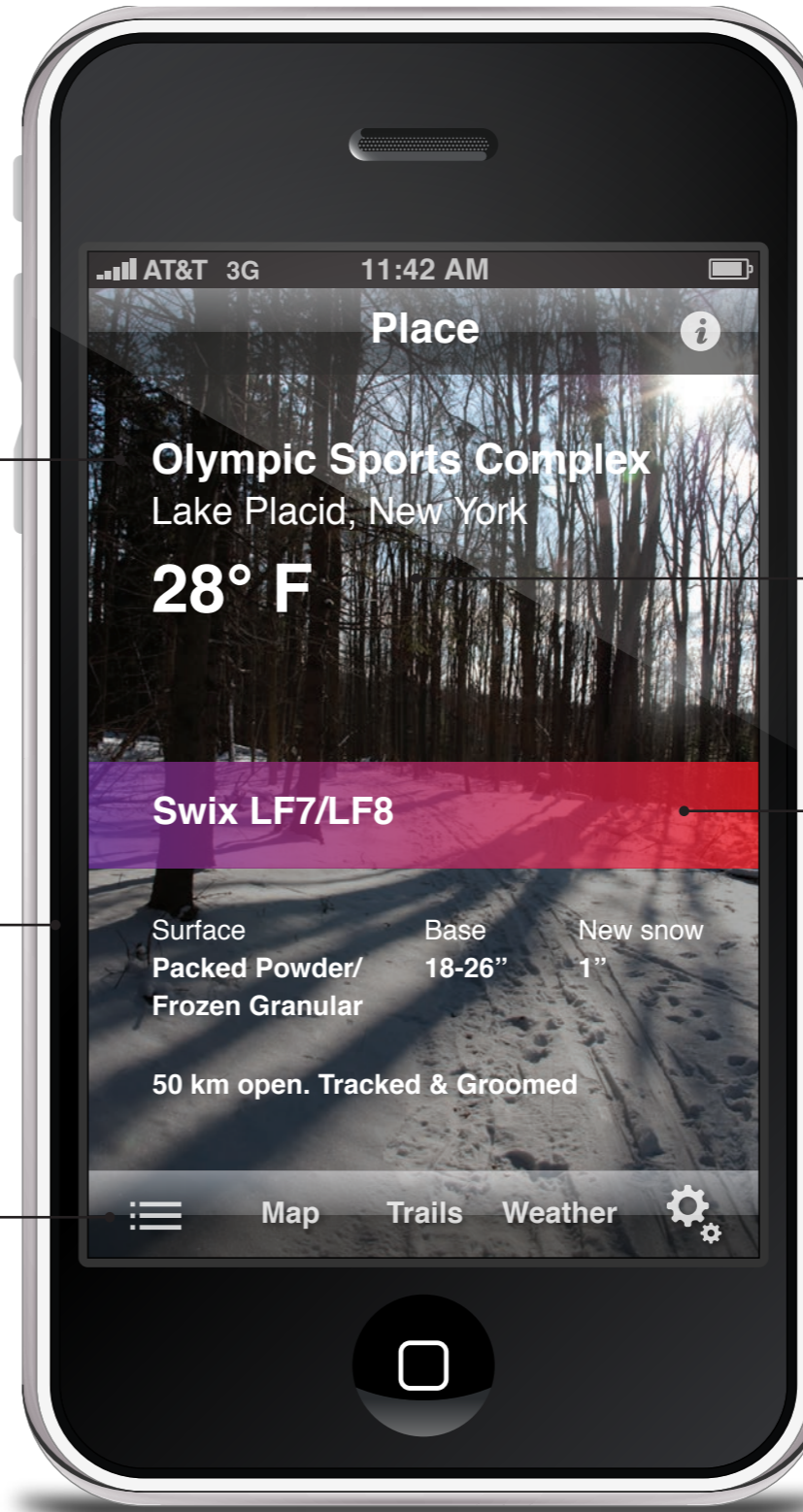G/T   Camden, New York

Design specifications

Place

Location info and temp
Helvetica bold 18 pt
Helvetica regular 14 pt
Helvetica bold 32 pt
White

Surface conditions, base,
amount of new snow, trails
open, and groom status

320 × 145 px
Gray 80%
Opacity 50%

My places list view icon

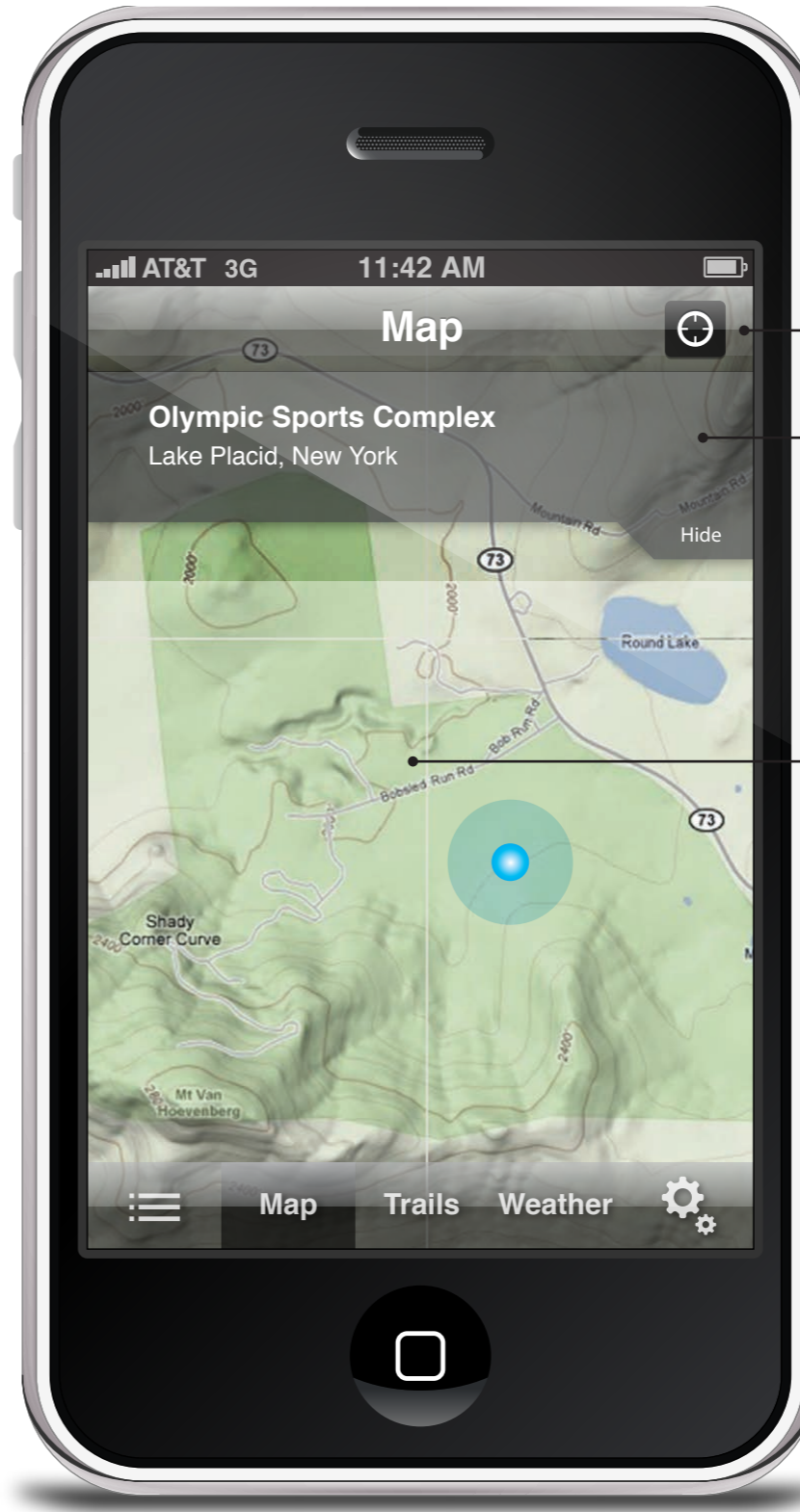**Place image**
320 × 480 px

Full color

Wax recommendation
320 × 50 px

Color indicates color of
wax (based on Swix LF
wax temps.)

Wax name
Helvetica bold 18 pt
White

Design specifications

Map

GPS location

Location info tab
320 × 90 px

Gray 60%
Multiply

Google Earth terrain map
320 × 480 px

Olympic Sports Complex
Lake Placid, New York

Hide

Map   Trails   Weather

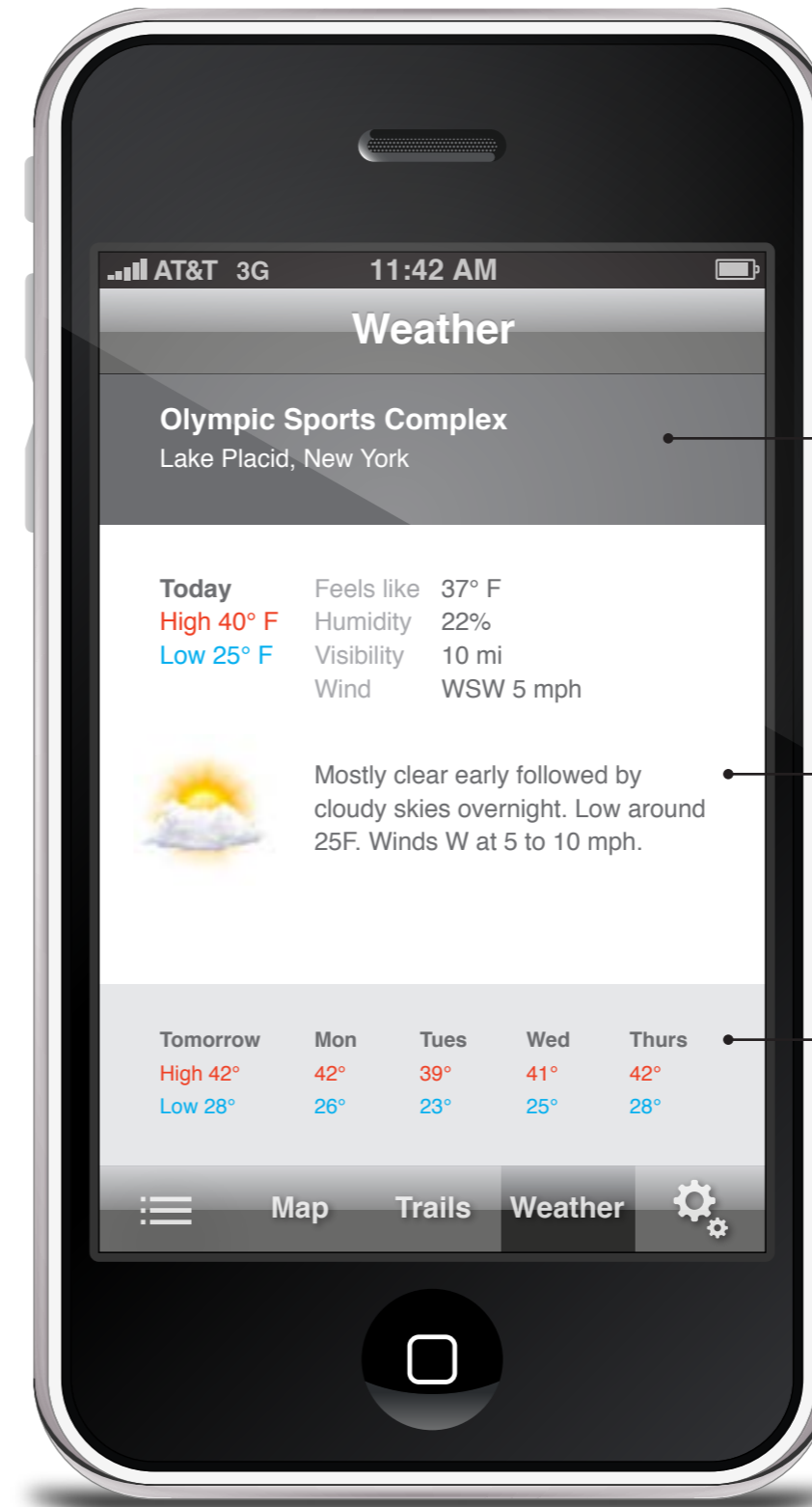# Design specifications

Trails

Location info tab
320 × 90 px

Gray 60%
Multiply

Location trail map
pdf | tif | jpg

Design specifications

Weather

Location info tab
320 × 90 px

Gray 60%
Multiply

Today's weather
Powered by Yahoo API

Five day forecast
Highs and lows