Belper

Bathroom Finder

Jacob Winter, Mat Keilholz, Tyler Singer, Ki Shon

The Problem and Creation

- The difficulty in finding a bathroom in public areas that are available, upkept, and close enough to your current location.
    - Emergency Bathroom Use
    - Closed/Busy Bathrooms
    - Private Bathrooms locked

- The Idea for creation is the basic use of an app that assists you in finding bathrooms in new or unfamiliar areas.
    - Urban Focus
    - Attention to Travelers, Delivery Drivers, and Tourists
    - Creation of Direct Business to Customer relations through the App

Desirability

- Focused around Commercial and Transportation Industry
  - o Going around local transportation Businesses like DHL, Pronto Plumbing, PPnL, Uber and Lyft Drivers
  - o Positive Opinion, of a will use for GPS Functionality if present
- FedEx
  - o FedEx research conducted at FedEx Ground Middletown PA
    - Line 500 Diverse Delivery Area of Lebanon County (Urban, Suburban, and Rural Coverage)
    - Positive Review from 10 or the 12 Drivers, leaving Comments of Would use because it doesn't contradict with the GPS Mapping for Deliveries
    - 2 that said no stated Rural areas cause Massive problems for delivery times and distance
- Traveler and Repetitive Tourists
  - o Conducting Research through actively Traveling family members
    - Found it to be useful when on a trip to the destination but not at the destination due to it being a public place designed for such needs
- "Frequent Flyers"
  - o Conducted on People casually just driving through random areas
    - Find it a useful idea and proposition due to the lack of knowledge in the area, it shows places to do that also have a bathroom to head to when you need to go.

Desirability Continued

- Local Business
  - Talking to 2 Local Businesses Owner in Mechanicsburg, PA.
    - Strong Support for their bathroom usage for people going through in the local area
    - Brings Attention and customer possibility
    - Would sign to use the app as a support for a "free" self-advertisement through 3rd party (Belper)

- Basic Support Results of Proposition
  - Urban > Rural Support Base
  - Unkown Area > Known Area
  - Unplanned > Planned
  - Strong Support for Business Use

- An App that constantly shows the nearest bathroom locations through multiple ways

  - Interactive Map
  - GPS / Tracking
  - Live Status Feed
  - User Interaction (Yelp Page for Bathroom Review)
  - Exploration of Local Businesses

Value Proposition

- Primary Focus
  - Delivery/Transportation Drivers
  - Constantly Changing Location Usage
  - Urban > Rural Bathroom Usage

- Secondary Focus
  - Tourists, Travelers, Wanderers
  - Often In Common Locations
    - Only seen in Public Shopping Centers
    - Not moving around from Location to Location
    - Not leaving an area of a Known Nearby Bathroom
  - Rural > Urban

Key Resources

Key Activities

Technology & Infrastructure:

-Backend Servers: To support the app's data storage, user accounts, location services, and database for restroom locations and user reviews

- **Mapping API:** Use a mapping API like Google Maps API, Firebase, or OpenStreetMap for our basic GPS structure

- Database: Store restroom data, user ratings, reviews, and photo

- Analytics Tools: For tracking usage, location data, and app performance.

App Development & Maintenance:

- Developing the app for iOS and Android platforms

- Regular updates to improve features, fix bugs, and address user feedback

- Implementation of the mapping and location-tracking functionalitie

- Integration of user review and rating systems.

Data Collection & Verification:

- Initial data gathering of restroom locations in targeted launch areas

- Regular updates to restroom data, adding new locations, and verifying existing ones

- Partnerships with businesses to confirm restroom availability

User Engagement & Community Building:

- Encourage users to submit new restroom locations, rate cleanliness, and add comments.

- Social media presence to promote app features and user contribution

Marketing & Promotion:

- Digital marketing campaigns (Google Ads, social media ads).

- Partnerships with travel sites, city tourism boards, or local businesses

- SEO for keywords like "find bathroom near me" or "public restroom app"

Key Costs

Development Costs:
- Initial app development for both iOS and Android
- Mapping API usage fees
- Hosting and server cost

Operational Costs:
- Data storage for restroom databases, user accounts, reviews, and photos
- Maintenance and updates for app
- Customer support and moderation team salaries

Marketing & User Acquisition:
- Paid advertising on search engines and social media platforms
- Website and landing page design for the app
- Influencer partnerships or promotions in relevant travel or lifestyle spaces

Legal and Compliance:
- Legal fees for drafting terms of use, privacy policies, and ensuring compliance
- Ongoing costs for data privacy compliance and monitoring

Feasibility

- **Short Run Structure (6-12 months)**
  - As for the feasibility of the app, there are key resources to mention that will depend on if we can lower cost from the beginning.
  - Core components include location/mapping services, and the database containing all of the bathrooms listed on the app.
  - Keep-up will be fairly simple as the use of existing technologies currently, like Google Maps API, Firebase, and OpenStreetMap help reduce early costs.
  - For the database, since Firebase will be used it will help with doing most of the hard work for us. Allowing more time to develop new features for the app.
  - Start out with suburban areas, such as gas stations.

Feasibility Continued

- **Short Run Continued (6-12 months)**
  - Since tourism and traveling have increased
  - More people may need to use bathrooms and may not know where the nearest available one may be.
  - Which helps us as they can use this app and have a sure for way for knowing when and where there is a bathroom nearby.
  - During this 6-12 month period as the app picks up traffic, this will also help the outreach of our app, which could pull in potential stakeholders, partnerships, or sponsorships.
  - This will help in the long run build on our budget.

Long Run Structure (12 - 18 months +)

- Partnerships and crowd-sourcing will help the app grow more as users input their data and help feed the database.

- Advanced features as, a 3D layout can be implemented which can help create a more interactive experience that would separate our app from others.

- Making this app available in other regions can also help us in the long run.

Feasibility Continued

Long Run Structure (12 months +)

- Expanding to bigger cities first can help, gauge how the app will do later on with the global outreach

- With the use of crowd sourcing this helps cost, as the data being provided will be from the users allowing less work on our part

- With the AR addition, the physical locations could be mapped out which would help directions be more accurate.

Viability

Market Demand

- **Travel and Tourism Growth**: The global tourism industry is projected to grow by 7.4% annually through 2032 (source: *Statista*), increasing demand for public restroom locators.
- **Health and Hygiene Awareness**: Public concern over cleanliness and accessibility has spiked since the pandemic, creating a niche for hygiene-monitoring apps.

Competitor Analysis

- **Direct Competitors**:
  - Apps like "Flush" or "Toilet Finder" focus solely on bathroom location but lack real-time condition updates or crowdsourced monitoring.
- **Indirect Competitors**:
  - Review platforms like Google Maps or Yelp include restroom information but are not specialized.

Opportunity: Belper can fill a gap by providing updated, verified restroom data, a seamless navigation experience, and premium services.

Capital and Recurring Expenditures

- **Capital Expenditures** (CapEx)

- These are initial one-time costs for getting the app up and running.

- - **App Development** (iOS and Android):

-   - **Basic App** (backend, frontend, database setup): $40,000 - $80,000

-   - **Advanced Features** (real-time updates, navigation integration, user profiles): $30,000 - $50,000

-   - **Total App Development Cost**: $70,000 - $130,000

- - **Technology Infrastructure** (Servers, Cloud Storage, Database Hosting):

-   - **Cloud Hosting and Database Setup**: $5,000 - $10,000 (one-time setup, with additional ongoing costs below)

- - **Map API and Navigation Integration Licenses**:

-   - **Mapping Services** (Google Maps API, etc.): $1,000 - $5,000 initial licensing fees, depending on usage

- - **Legal, Licensing, and Permits**:

-   - **Trademarking, Terms of Service, Privacy Policies**: $2,000 - $5,000

- **Total CapEx Range:** $78,000 - $150,000

Recurring Expenditures

(Operating Expenses / OpEx)

These are ongoing costs needed to keep the app functional and growing.

- **Server & Cloud Hosting**: $500 - $2,000/month (scales with user base)

- **Map and Location APIs** (based on usage): $500 - $3,000/month

- **Restroom Agent Payouts**:

  - Estimating $8 per restroom visit, and assuming 1,000 restrooms to monitor weekly: $8,000/week or about $32,000/month (will vary based on network size and frequency of checks)

- **Marketing & Advertising**:

  - **Digital ads, partnerships, SEO**: $5,000 - $10,000/month (higher initially)

- **Customer Support**:

  - **Part-time support reps** (chat/email): $2,000 - $5,000/month

- **Maintenance & Updates** (App and Backend):

  - **Regular updates, bug fixes, improvements**: $2,000 - $5,000/month

- **Insurance and Legal Fees**:

  - **General liability and legal fees**: $1,000 - $3,000/month

Total Recurring Expenditures (monthly): $43,000 - $60,000/month

Revenue Projections and Estimated Profitability Timeline

- **Revenue Projections**

- **Premium Subscription Fees**: ($5/month for premium features)

-   - 5,000 subscribers = $25,000/month

-   - 10,000 subscribers = $50,000/month

- **Ad Revenue**:

-   - Advertising revenue from local businesses or Google AdMob: $3,000 - $10,000/month

- **Business Partnerships**:

-   - Paid listings for businesses or facilities that want to attract foot traffic (e.g., malls, cafes): $1,000 - $5,000/month

- **Total Potential Monthly Revenue**: $29,000 - $65,000/month initially, growing with user base

Estimated Profitability Timeline

Assuming the app gains traction:

- **Breakeven Point**: Likely within 12-18 months, depending on user growth and successful premium conversions.

- **Scalability**: As more users join, some costs (e.g., agent payouts and hosting) will rise, but revenue from ads and subscriptions should grow faster.

Summary Table

Category	Amount
Capital Expenditures (CapEx)	$78,000 - $150,000 (One-Time)
Monthly Operating Costs	$43,000 - $60,000
Monthly Revenue Potential	$29,000 - $65,000
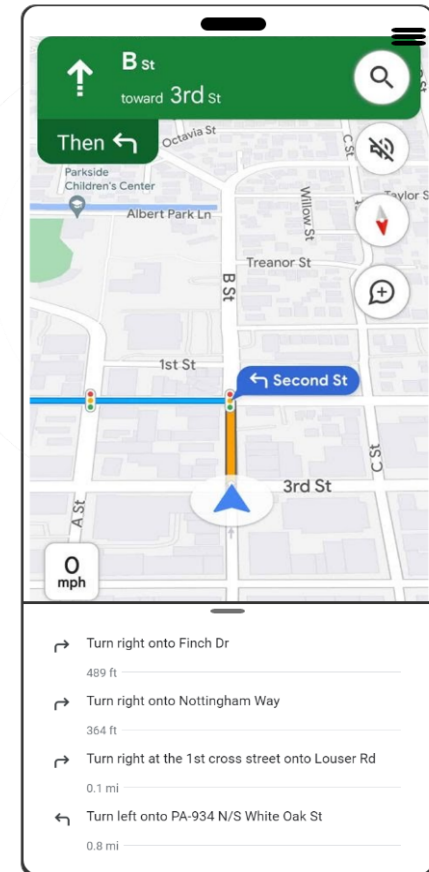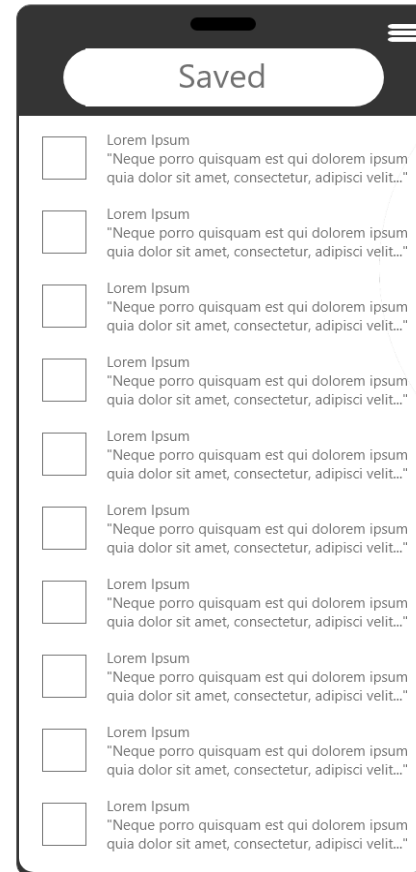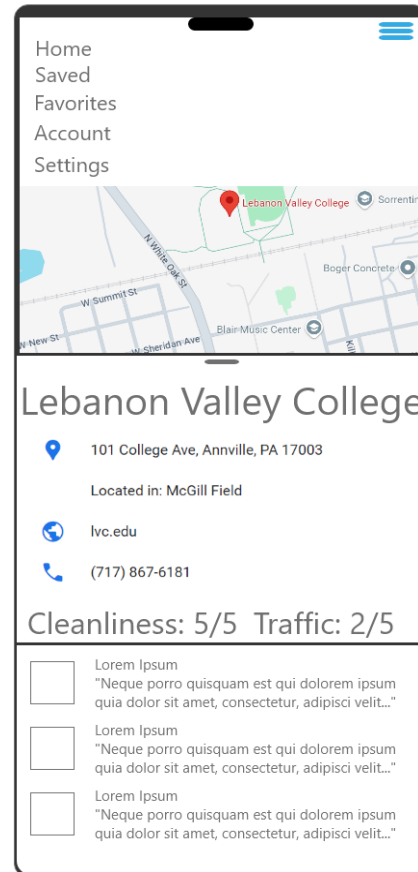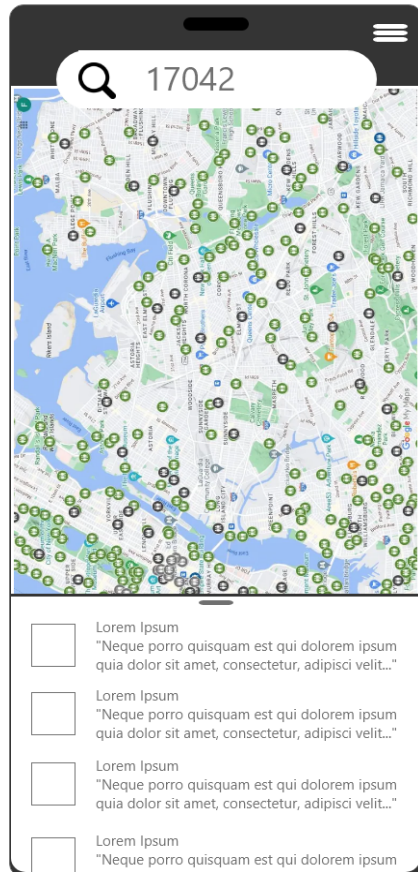
Prototyping:

- Searches for nearby bathrooms to both current and desired locations.

- Gives directions to bathrooms for driving, walking, biking, etc.

Prototyping:

- Section for cleanliness rating and traffic rating to show if the bathroom is well maintained and if the bathroom is busy.

- Saved tab for location you enjoy and do not want to forget.