

CONCEPT STUDY · INTERACTIVE PROTOTYPE

ClubCircle: Community and sports club coordinator with skill-tiered RSVPs, route hazard maps, and member privacy controls.

Structured event RSVPs with skill tiering and transparent moderation. Organizers define distinct speed groups (e.g. Social 14–16 mph, Intermediate 17–19 mph, Fast 20+ mph) each capped at 12 riders, with mandatory route hazard briefings that riders must review before RSVP confirmation.

INDUSTRY VERTICAL	DOMAIN SECTOR
Hospitality & Member Services	Community Organizations & Sports Clubs
PROTOTYPE STACK	TARGET PRODUCTION RUNTIME
Next.js / TypeScript	React Native / Expo

Executive Summary

Hannah, ride director for a 600–member community cycling club, organizes the Saturday Morning 50–mile road ride. In generic group chat apps, riders of drastically different abilities show up without knowing the expected speed, while beginner riders get dropped on dangerous descents.

Casual messaging groups lack structured skill-tiered RSVPs, safety acknowledgements, and participant caps, resulting in dangerous group rides, member intimidation, and safety liabilities.

Operational Hurdles & The Failure of Conventional Approaches

In real-world mobile deployments within Hospitality & Member Services, applications encounter operational friction that desktop web portals never face.

Core Engineering Challenges Addressed:

- 1. Operational Bottleneck:** Casual messaging groups lack structured skill-tiered RSVPs, safety acknowledgements, and participant caps, resulting in dangerous group rides, member intimidation, and safety liabilities.
- 2. Data Integrity Risk:** Traditional approaches rely on synchronous network calls that fail under unstable cellular handoffs or high concurrency.
- 3. User Experience Impact:** Frustration occurs when users lose in-progress work or receive misleading feedback from unbuffered user interfaces.

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Architectural Solution & Interface Design

Demonstrated UX & Architecture Decision:

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Principal Interface Screens (5 Views):

1 Club Announcement Feed

Curated club calendar, pinned weather briefings, and volunteer marshall sign-ups.

2 Route Overview & Elevation Map

Interactive route profile highlighting steep descents, rest stops, and water points.

3 Skill-Tiered RSVP Selector

Speed group selection with live capacity badges and waitlist counters.

4 Mandatory Safety Briefing

Point-by-point hazard review (e.g. gravel on Sector 3 descent) requiring rider sign-off.

5 Ride Leader Roster Management

Organizer view for checking in attendees, managing waitlists, and broadcasting alerts.

Interactive Journey: Tiered Group Ride RSVP to Route Briefing Confirmation

View Saturday ride → Inspect 50-mile route map → Select Intermediate pace group → Review safety hazards → Confirm RSVP → View confirmed ticket.

- 1 Open ClubCircle cycling club calendar
- 2 Select "Saturday Coastal 50-Mile Ride" and review route elevation profile
- 3 Observe "Fast Pace (20+ mph)" group is at capacity (12/12 riders)
- 4 Select "Intermediate Pace (17-19 mph)" group (8/12 available slots)
- 5 Acknowledge mandatory road hazard notice: "Construction gravel on Mile 14"
- 6 Confirm RSVP and receive digital ride pass with assigned ride leader contact
- Reset Mechanism: One-click reset to initial unreserved ride roster.

Handled Edge Cases & Exception Recovery

**Edge Condition #1:**

Ride capacity full waitlist flow automatically promoting waitlisted members when cancellations occur

**Edge Condition #2:**

Inclement weather cancellation banner broadcasting push notifications and SMS alerts to all RSVP'd riders

**Edge Condition #3:**

Member privacy toggle allowing riders to conceal phone numbers and residential addresses from public directories

Actual Prototype vs. Target Native Production Runtime



Actual Prototype Stack

Platform & Framework:

Next.js / TypeScript

Languages:

TypeScript, Tailwind CSS

Sports club portal simulating tiered group ride signups, capacity waitlists, and route briefings.



Target Production Stack

Platform & Framework:

React Native / Expo

Languages & Storage:

TypeScript, Supabase Auth, Mapbox SDK

Rich vector mapping, cross-platform push notifications, and fine-grained row-level security for member privacy.

Explicit Prototype Boundaries & Validation Methodology

Documented Prototype Limitations:

- Simulated in browser using interactive SVG route maps rather than native Mapbox GL vector tile rendering.
- GPS rider tracking during active rides simulated without physical device location streaming.

Target Production Telemetry:

Evaluate rider accident rates and participant satisfaction across 40 weekend club rides.

Commercial Offer Alignment & Handover Guarantees

This technical concept study directly demonstrates the design, state-machine architecture, and resilience engineering delivered under FFNA Solutions' fixed-scope programs:

Product Prototype Sprint

2-week fixed sprint delivering high-fidelity interactive simulation with edge recovery.

Mobile MVP Launch

6–8 week end-to-end production build with backend API, store release, and full IP transfer.

 **Handover Guarantee**

100% intellectual property ownership transferred upon milestone completion. Comprehensive technical documentation, architecture runbooks, and zero vendor lock-in.