



# WANDERIFY

From On-Chain to On-Ground

WHITEPAPER v1.0

Travel-to-Earn Protocol on Polygon Network

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## 1. Executive Summary

### 💡 The Vision

**Wanderify** transforms physical travel into verifiable, rewarding on-chain adventures. Built on Polygon, we connect *on-chain intent* with *on-ground proof*, creating the world's first sustainable travel-to-earn economy.

Wanderify introduces a revolutionary approach to travel incentivization:

- ⚡ **Stake-First Economics:** Users commit funds before travel, proving genuine intent
- GPS + ZK Verification: Polygon ID enables privacy-preserving location proofs
- ♻️ **Circular Pool Economy:** Failed journeys fuel rewards for successful travelers
- 🖼️ **Journey NFTs:** ERC-721 collectibles prove completed adventures



## 2. The Pitch

### 2.1 One-Liner

*“Stake your commitment. Travel the world.  
Prove you arrived. Earn your reward.”*

### 2.2 The Wanderify Promise

#### For Travelers:

- Turn every journey into a financial opportunity
- Gasless transactions via meta-transactions
- Collect unique Journey NFTs
- Compete on global leaderboards

#### For the Ecosystem:

- Self-sustaining token economy
- Real yield from DeFi integration
- Growing pool rewards over time
- Anti-fraud ZK verification

## 2.3 Why Now?

Market Trend	Wanderify Response
<b>Web3 gaming saturation</b>	First mover in <i>real-world</i> earn mechanics
<b>Travel industry recovery</b>	\$9.5T global travel market ready for innovation
<b>NFT utility demand</b>	NFTs that prove real experiences, not just art
<b>Polygon ecosystem growth</b>	Native integration with Polygon ID, Lens, Aave

## 3. The Problem

### ⚠ The Current State of Travel + Web3

Despite billions traveling annually, there is **no protocol** that verifiably connects on-chain intent with on-ground movement. Travel remains an unmonetized, unverifiable action in the Web3 space.

### 3.1 Problem Breakdown



Figure 1: The Three Core Problems in Travel-to-Earn

### 3.2 Detailed Analysis

#### 1. Verification Gap

- GPS can be spoofed with simple apps
- Photo metadata is easily manipulated
- IP-based checks are bypassed with VPNs
- No privacy-preserving verification exists

#### 2. Economic Sustainability

- Current “earn” apps print tokens endlessly
- No skin-in-the-game from users
- Rewards come from token inflation, not real value
- Death spiral when token price drops

#### 3. User Experience

- Complex wallet interactions
- High gas fees for microtransactions
- No engaging visual experience
- Fragmented social features

## 4. The Solution

### 💡 Wanderify's Answer

A **stake-first, circular-pool economy** with **ZK-verified location proofs** on Polygon, delivering gasless UX and sustainable rewards.

### 4.1 Solution Architecture Overview

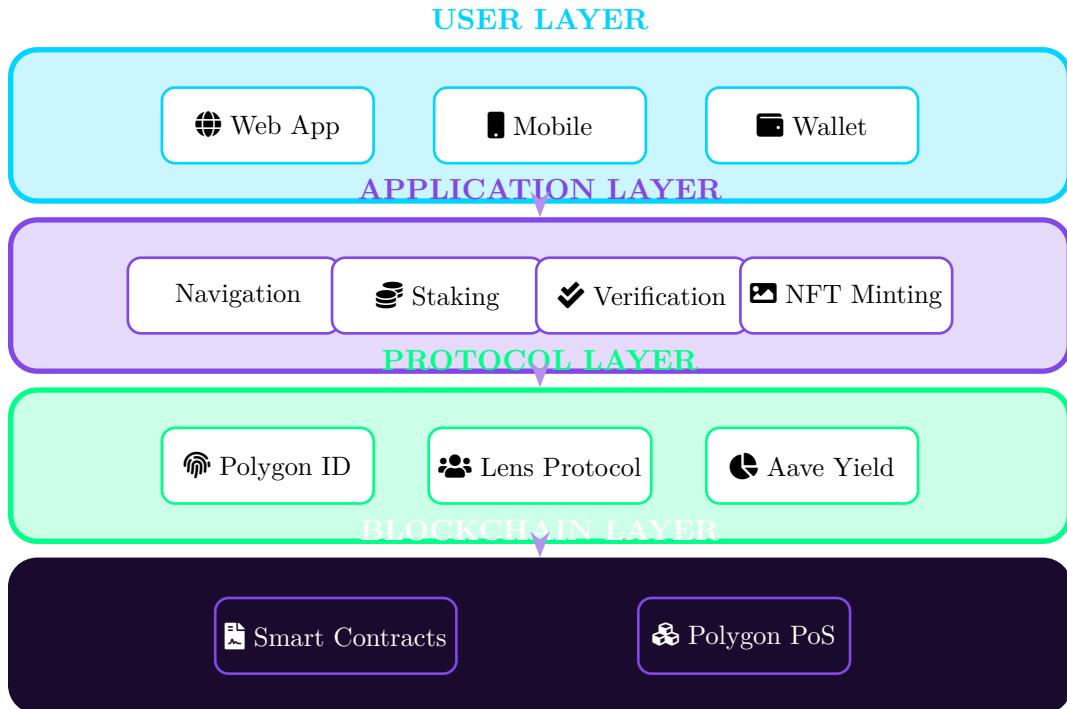


Figure 2: Wanderify Four-Layer Architecture

## 4.2 Core Mechanisms

### 4.2.1 1. Stake-First Economics

Users must stake tokens **before** their journey, creating genuine commitment and funding the reward pool.

Parameter	Description	Value
Minimum Stake Duration	Lock period before travel date	15 days
Platform Fee	Fee sent to treasury	4%
Pool Deposit	Amount added to destination pool	96%
Claim Window	Time to verify after arrival	24 hours

Table 1: Staking Parameters

#### 4.2.2 2. Circular Pool Economy

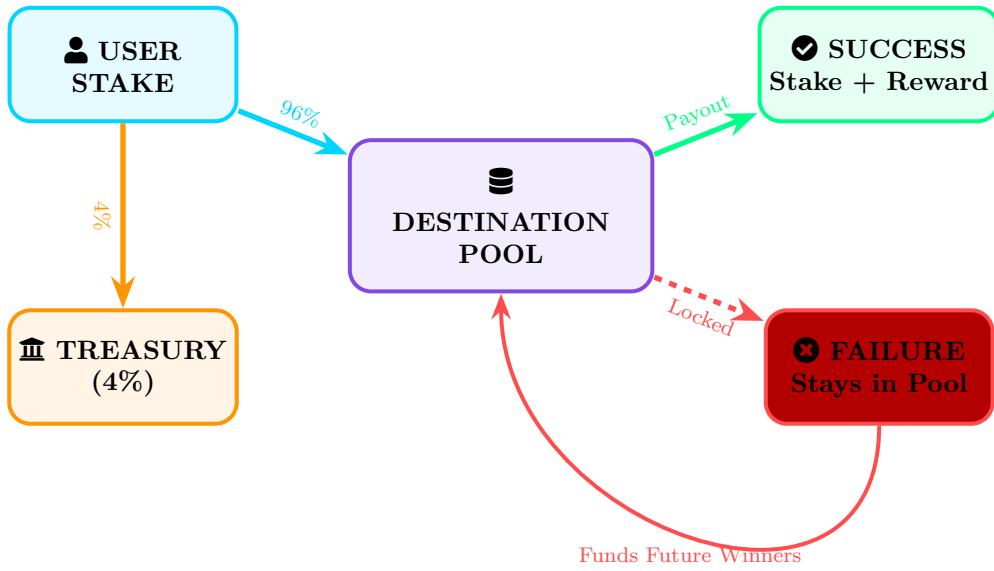


Figure 3: Circular Pool Economy Flow

#### 4.2.3 3. Reward Formula

The emission calculation ensures sustainable rewards:

$$E = \min \left( R_{base} \times \left( 1 + \frac{\beta \times PV}{100} \right), \quad Pool \times 10\% \right) \quad (1)$$

Variable	Description	Default
$R_{base}$	Base reward per check-in	0.002 MATIC
$\beta$	Place value multiplier	50 (0.5 scaled)
$PV$	Destination difficulty (0-100)	Varies
$Pool$	Current pool balance	Dynamic

**Total Payout:**

$$\text{Payout} = \text{AmountInPool} + E \quad (2)$$

### 4.3 Polygon-Native Integrations

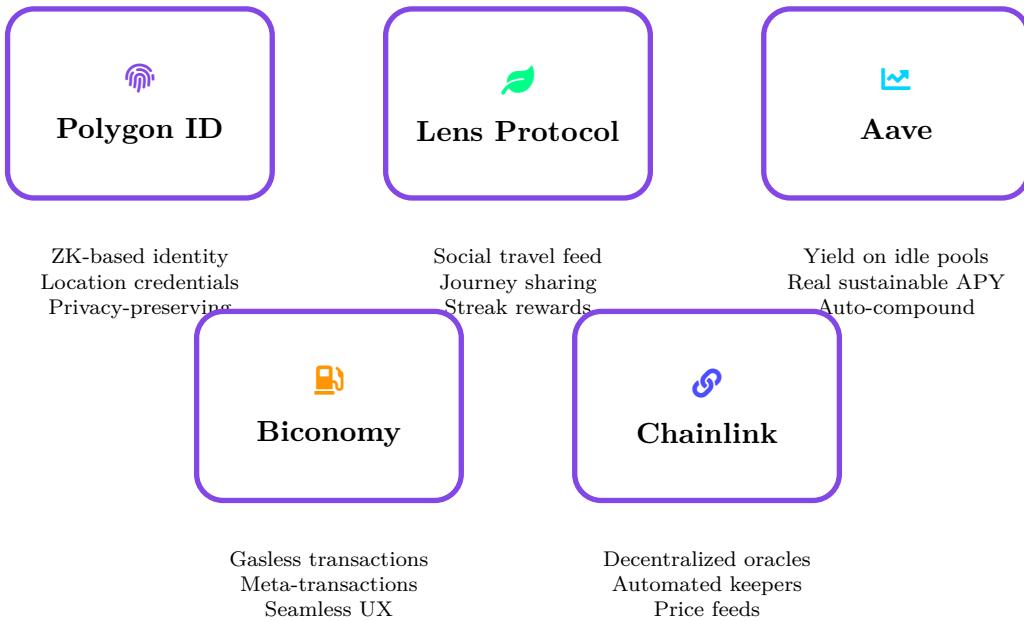


Figure 4: Polygon Ecosystem Integrations

## 5. Technical Architecture

### 5.1 Smart Contract Design

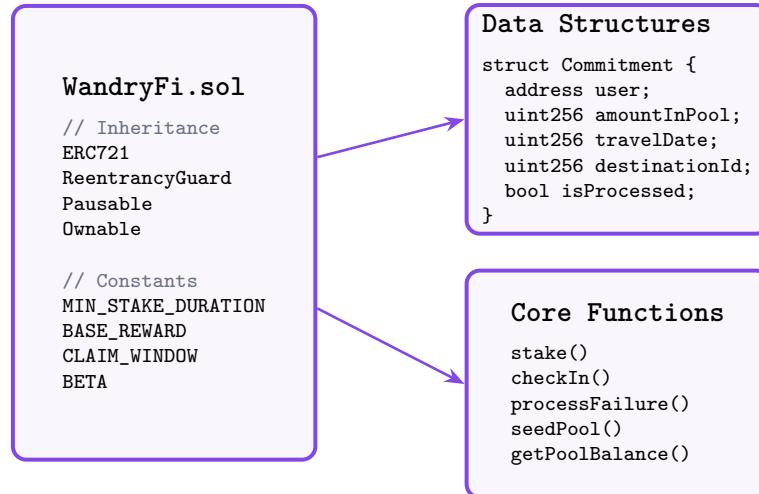


Figure 5: Smart Contract Structure

## 5.2 Verification Pipeline

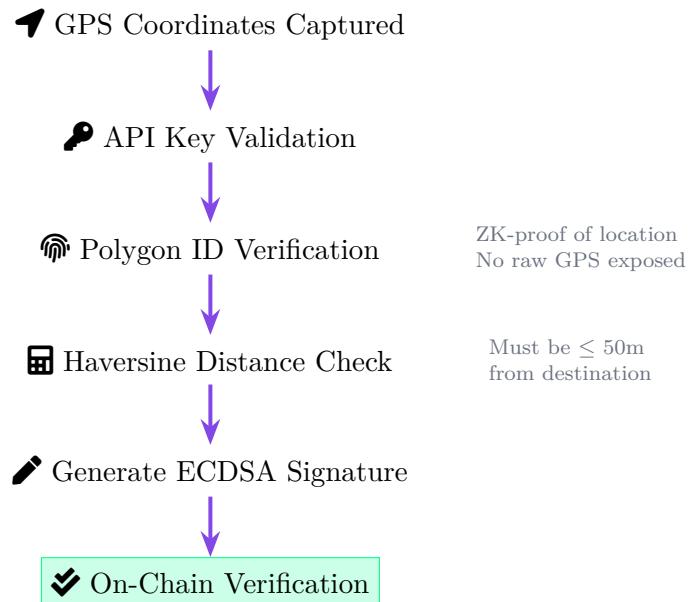


Figure 6: Location Verification Pipeline

## 5.3 System Architecture Diagram

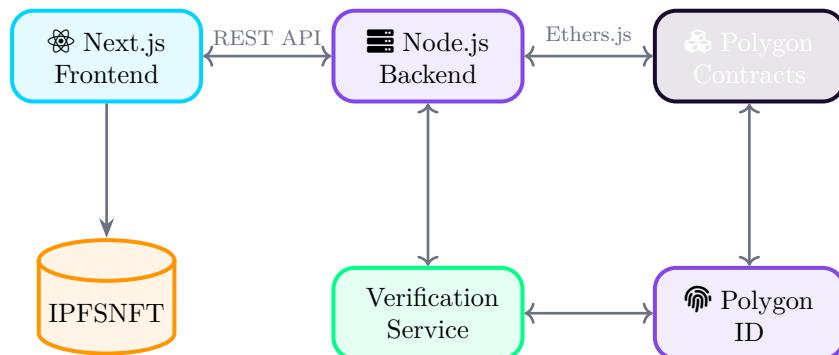


Figure 7: System Architecture

## 6. User Flow

## 6.1 Complete Journey Flow

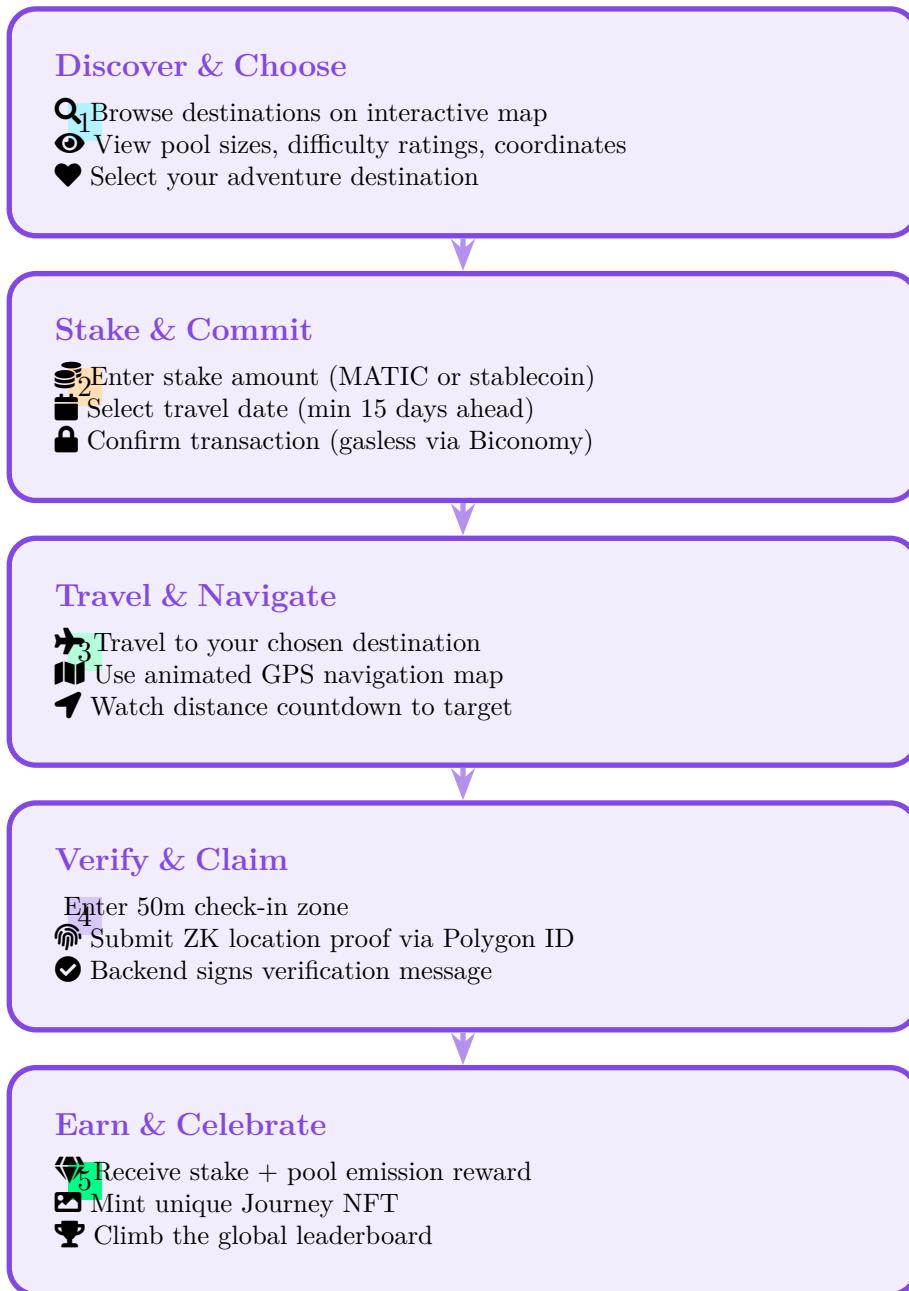


Figure 8: Complete User Journey

## 6.2 Navigation Experience

The animated navigation map provides real-time guidance:

Zone	Distance	Visual Indicator
Red	> 500m	Red zone — Navigate to target
Blue	≤ 500m	Blue zone — Approaching destination
Orange	≤ 100m	Orange zone — Almost there!
Green	≤ 50m	Green zone — Check-in available

Table 2: Distance-Based Navigation Zones

## 7. Tokenomics

### 7.1 Token Utility

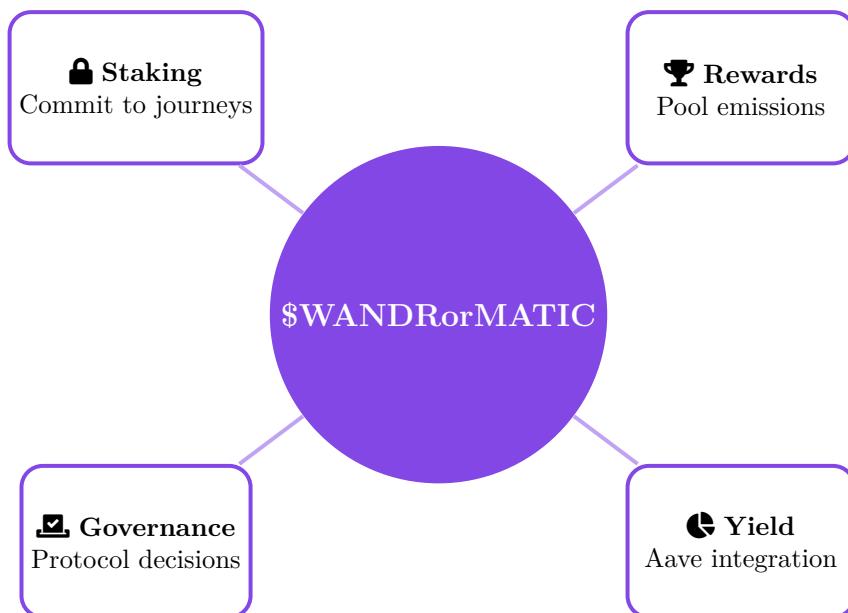


Figure 9: Token Utility Diagram

### 7.2 Fee Distribution

Figure 10: Fee Distribution Model

## 7.3 Sustainable Economics

### ♻️ Self-Sustaining Model

Unlike inflationary “Play-to-Earn” models, Wanderify operates on a **zero-sum circular economy**:

- Failed journeys → Stakes remain in pool → Larger future rewards
- Successful journeys → Capped at 10% pool emission → Pool never depletes
- Idle pools → Deposited in Aave → Real yield added to rewards
- Platform fees → Fund development & liquidity

## 8. Roadmap



Figure 11: Development Roadmap

## 9. Security Considerations

### 9.1 Smart Contract Security

Measure	Implementation
Reentrancy Protection	OpenZeppelin ReentrancyGuard on all state-changing functions
Access Control	Ownable pattern with multi-sig planned
Pausability	Emergency pause capability for critical issues
Signature Verification	ECDSA with trusted verifier address
Pool Cap	Max 10% emission prevents pool drainage

## 9.2 Anti-Fraud Measures

1. **Polygon ID ZK Proofs:** Location verified without exposing raw coordinates
2. **IP Geolocation:** Country code must match destination
3. **VPN/Proxy Detection:** Blocked at API level
4. **Minimum Stake Duration:** 15 days prevents quick speculation
5. **Single Active Commitment:** One quest per wallet at a time

## 10. Conclusion

### The Future of Travel

**Wanderify** represents a paradigm shift in how we think about travel and blockchain. By combining:

- **Polygon's** speed, low fees, and ecosystem (ID, Lens, Aave)
- **Zero-knowledge** proofs for privacy-preserving verification
- **Circular economics** for sustainable rewards
- **Gamified UX** for engaging experiences

We create a protocol where *every step becomes a transaction* and *every arrival becomes a reward*.

Stake. Travel. Prove. Earn.

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## A. Technical Specifications

### A.1 Contract Parameters

Parameter	Value	Description
BASE_REWARD	0.002 MATIC	Minimum emission per successful check-in
BETA	50	Place value multiplier (0.5 scaled by 100)
platformFeePercent	4%	Fee sent to treasury (max 5%)
MIN_STAKE_DURATION	15 days	Minimum stake lock period
CLAIM_WINDOW	1 day	Time window to claim after travel date
CHECK_IN_RADIUS	50 meters	Required proximity for verification

### A.2 API Endpoints

Endpoint	Method	Description
/api/verify	POST	Submit GPS for verification
/api/destinations	GET	Fetch all destinations
/api/leaderboard	GET	Get top travelers
/api/user/:address	GET	Get user commitment data

### A.3 Destination Registry

ID	Destination	Country	Place Value	Difficulty
1	Everest Base Camp	Nepal	80	Legendary
2	Chadar Trek	India	70	Epic
3	Hemkund Sahib	India	60	Hard
4	Key Monastery	India	50	Hard
5	Havelock Island	India	40	Medium
6	Jaisalmer Fort	India	30	Medium
7	IIIT Dharwad	India	20	Easy
8	LNMIIT Jaipur	India	20	Easy

## B. Legal Disclaimer

This whitepaper is for informational purposes only and does not constitute financial, legal, or investment advice. Cryptocurrency and blockchain technologies involve significant risks. Past performance is not indicative of future results. Please conduct your own research and consult with qualified professionals before participating in any blockchain-based activities.

The Wanderify protocol is provided “as is” without warranties of any kind. The team reserves the right to modify the protocol, tokenomics, and roadmap as development progresses.

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