

Section A: Organizational Background, Governance & Experience

Organization History and Mission

Basoro LP is a mission-driven infrastructure and technology company focused on increasing recycling participation through incentive-aligned public systems. The organization was founded to address a persistent challenge faced by municipalities nationwide: while recycling infrastructure may exist, participation rates remain low due to convenience barriers, limited incentives, and lack of meaningful feedback to residents.

Basoro approaches recycling as a behavioral and systems-design challenge, not solely a technical one. Our organization designs public recycling infrastructure that aligns resident motivation, municipal waste diversion goals, and operational feasibility. This includes integrating reverse vending machines with incentive mechanisms, public-space infrastructure, and data systems that support long-term planning and program evaluation.

Basoro operates with the understanding that successful recycling programs must be easy to use, trusted by residents, and economically sustainable for public partners.

Governance Structure and Nonprofit Stewardship

Basoro operates under a dual-entity structure designed to balance public benefit, accountability, and operational execution.

The Basoro Sustainability Foundation is a nonprofit public-benefit organization that serves as the mission steward of the Basoro ecosystem. The Foundation is responsible for advancing ecological outcomes, equity considerations, and community engagement goals, and it provides governance oversight to ensure alignment between public purpose and program implementation.

Basoro LP functions as the operating and delivery entity, responsible for deploying infrastructure, managing technology systems, and supporting municipal and community partners. This structure allows Basoro to:

- Align public-interest objectives with operational capacity
- Maintain transparency and mission integrity in public-sector partnerships
- Engage in long-term planning without prioritizing short-term commercial outcomes over community benefit

This governance model is designed to support collaboration with municipalities, waste authorities, and public agencies that require mission alignment, accountability, and flexibility.

Behavioral Design Approach

A core differentiator of Basoro's work is its emphasis on behavioral design and real-world validation. The organization intentionally designs recycling systems based on how people actually interact with public infrastructure, particularly in urban environments and communities where participation has historically been inconsistent or underserved.

Basoro's design process considers:

- Friction points that discourage participation or repeat use
- The role of incentives (including cash and cash-equivalent options) in motivating behavior
- Equity and dignity in user experience
- Transparency and clarity in how incentives are earned and delivered
- Trust in public-facing systems

Rather than relying on assumptions or static hardware, Basoro prioritizes testing and refinement in real-world contexts prior to and during deployment.

University Collaboration and System Validation

Basoro is currently engaged in structured collaborations with university students and faculty across disciplines including sustainability, behavioral science, urban planning, and data analytics. These collaborations are designed as applied validation and ideation efforts that inform system design, not as academic experiments.

Current university-supported work includes:

- Evaluating how different incentive structures (e.g., cash, vouchers, digital credits) influence participation and repeat engagement
- Assessing user interaction flows at reverse vending machines to identify confusion, delay, or disengagement
- Exploring equitable incentive models that encourage participation across diverse income levels and neighborhoods
- Identifying design elements that increase trust, visibility, and ease of use in public settings

This work allows Basoro to reduce implementation risk for municipal partners by validating behavioral assumptions early and adapting program design based on observed outcomes.

Founder and Leadership Experience

Basoro was founded by Steven Pitts, who brings a multidisciplinary background spanning public administration, strategic planning, program design, supply chain & retail operations, leadership, and entrepreneurship.

As a native of Buffalo, NY, he grew up in a bottle-bill environment and cites recycling at RVMs during weekly grocery store visits with his grandmother as the foundation for Basoro's concept. With a career in large-scale supply chain and retail operations focused on organizational & human behavior, the idea of Basoro flowed naturally, and became a problem of obsession for him.

Basoro reflects this background by emphasizing:

- Collaboration with public agencies rather than disruption of existing systems
- Incremental pilots over untested large-scale rollouts
- Evidence-informed design rooted in lived experience and user behavior
- Governance structures that protect mission integrity while enabling execution

This leadership approach shapes Basoro's vision of recycling infrastructure as a shared civic asset—one that supports environmental goals, community participation, and municipal decision-making.

Operational Experience and Services Offered

Basoro provides integrated services to support reverse vending machine programs, including:

- Program design and pilot planning
- Reverse vending machine integration across single-feed, bulk-processing, and bag-drop configurations (machine-agnostic)
- Incentive processing and tracking

- Infrastructure planning, including optional solar-powered and low-grid configurations
- Remote monitoring, reporting, and program evaluation
- Ongoing optimization informed by behavioral and operational data

Basoro is designed to complement existing municipal waste management systems, recycling contracts, and downstream processing partners rather than replace them.

Section B: Overview of the Reverse Vending Solution & Infrastructure

Overview of the Basoro Reverse Vending Solution

Basoro's reverse vending solution is designed as modular public infrastructure that can be tailored to local priorities, funding structures, and deployment environments. The system integrates reverse vending machines with incentive processing, public-space infrastructure, and operational oversight to support beverage container recovery at scale.

Rather than offering a single, fixed configuration, Basoro's approach allows municipalities to pilot, evaluate, and refine program elements—such as incentive type, siting strategy, and operational intensity—before broader rollout.

Reverse Vending Machines & Accepted Materials

Basoro's platform is compatible with commercially available reverse vending machines capable of accepting commonly used beverage containers, including:

- Aluminum beverage cans
- PET plastic bottles
- Glass beverage bottles

Acceptance parameters are configurable based on machine capabilities, program goals, and downstream recycling requirements. Non-beverage containers, heavily contaminated items, or materials outside calibration thresholds can be excluded to protect material quality and system integrity.

Basoro takes a machine-agnostic approach, allowing flexibility in manufacturer selection and reducing long-term dependency on a single hardware provider. Our system architecture supports integration with single-feed machines, bulk-processing RVMs, and bag-drop models, allowing the City to evaluate multiple equipment formats within a unified reporting and incentive framework.

Where advanced container validation technologies are used, including AI-based recognition systems, Basoro's platform can integrate transaction-level data into program-wide reporting and incentive workflows.

Public-Space Infrastructure & Siting

Basoro's solution is designed for deployment in **publicly accessible, high-visibility locations**, including:

- **Retail-adjacent sites** (e.g., near food and beverage vendors)
- **Public buildings and facilities**
- **Libraries, community centers, and transit-adjacent locations**
- **City-owned land or shared public-private sites**

Siting decisions are informed by anticipated foot traffic, equity considerations, safety, and operational logistics. The goal is to place infrastructure where participation is convenient and visible, reducing barriers to use and encouraging repeat engagement.

Clean-Powered & Low-Grid Configurations

Where appropriate, Basoro supports the deployment of reverse vending infrastructure paired with **on-site solar generation and battery storage**. These configurations are intended to:

- Reduce ongoing electricity costs
- Improve system resilience
- Enable deployment in locations with limited grid access
- Support broader municipal clean-energy goals

Solar and battery components are optional and can be included or excluded based on site conditions, budget, and City preference.

Incentive Processing & Resident Experience

Basoro's platform is designed to support a range of incentive mechanisms, including:

- **Direct cash payments** (subject to funding and compliance structure)
- **Cash-equivalent options** such as prepaid cards, transit credits, or vouchers
- **Hybrid models** that combine multiple incentive types

Incentives are **issued at the time of container return or through defined redemption workflows**, depending on program design.

The resident experience is designed to be:

- Simple and intuitive
- Transparent in how incentives are earned
- Consistent across locations
- Respectful and non-stigmatizing

Behavioral design principles, informed by ongoing validation work, are used to reduce confusion, encourage repeat use, and build trust in the system.

Monitoring, Data & Program Visibility

Basoro provides remote monitoring and data aggregation to support:

- Machine performance and uptime
- Container counts and material types
- Incentive issuance volumes
- Program usage trends over time

All data is aggregated and privacy-aware, intended to support program evaluation, operational planning, and future decision-making rather than individual surveillance

Section C1: General Costs & High-Level Budget Considerations

This section is about credibility and restraint. You're showing DPW and NMWDA that you understand public budgeting realities *without* boxing yourself into numbers that belong in an RFP.

Overview of Cost Categories

The costs associated with implementing a reverse vending machine program generally fall into three primary categories: capital costs, operating costs, and program administration. Actual costs vary based on program scale, incentive structure, siting strategy, and service levels.

Basoro recommends evaluating these costs initially through a pilot deployment, allowing the City to refine assumptions before committing to a larger rollout.

Capital Costs

Capital costs may include:

- Reverse vending machines

- Site preparation and installation
- Electrical work or connectivity upgrades, where required
- Optional infrastructure components such as solar panels, battery storage, lighting, or security features
- Initial system configuration and integration

Capital expenditures can vary significantly depending on machine selection, site conditions, and whether clean-powered or low-grid configurations are included. Basoro's machine-agnostic approach allows the City to evaluate multiple hardware options without being locked into a single vendor.

Operating Costs

Ongoing operating costs typically include:

- Incentives paid to users (cash or cash-equivalent)
- Collection, hauling, and material handling
- Machine servicing, maintenance, and repair
- Connectivity, monitoring, and customer support
- Program oversight and reporting

Operating costs are strongly influenced by participation rates, incentive levels, and material volumes. Basoro emphasizes aligning incentive structures with behavioral insights to maximize participation while maintaining budget predictability.

Where applicable, Basoro's reporting architecture can support per-container or weight-based accounting models, including verification controls suitable for performance-based operator compensation structures. Actual rate structures would be determined collaboratively during pilot design and procurement phases.

Program Administration & Support

Program administration costs may include:

- Program coordination and vendor management
- Data aggregation, reporting, and performance evaluation
- Community outreach and education

- Pilot evaluation and program refinement

These functions can be scaled based on program size and City involvement.

Budget Planning Considerations

Basoro recommends that municipalities consider:

- Starting with a limited number of machines to establish baseline participation and cost data
- Testing different incentive structures to understand cost-per-ton diverted
- Evaluating site-specific differences in usage and operating requirements
- Incorporating flexibility to adjust incentives or service levels over time

This approach supports informed budgeting and reduces the risk of over- or under-allocating resources during early phases.

Section C2: Cost Avoidance & Potential Savings

Overview

In addition to waste diversion benefits, reverse vending machine programs can contribute to cost avoidance and operational efficiency when designed with long-term operating conditions in mind. Basoro's approach emphasizes infrastructure choices and behavioral design that help stabilize costs over time rather than shift expenses from one budget line to another.

Energy Cost Offset Through Solar and Battery Systems

When deployed, pairing reverse vending machines with on-site solar generation and battery storage can meaningfully reduce or offset electricity costs associated with continuous machine operation, lighting, connectivity, and security.

Potential benefits include:

- Reduced or eliminated grid electricity expenses at participating sites
- Predictable energy costs insulated from utility rate increases
- Improved system uptime during outages or grid disruptions
- Expanded siting flexibility, including locations with limited electrical infrastructure

By offsetting a portion of ongoing energy demand, solar and battery systems can help stabilize operating budgets over the life of the program and reduce reliance on host-site electricity contributions.

Reduced Litter and Collection Costs

Reverse vending machines placed in high-traffic public locations can reduce beverage container litter, particularly glass, which is costly to collect and process once dispersed in the environment.

Potential cost avoidance includes:

- Reduced street sweeping and litter abatement
- Lower cleanup costs in waterways and public spaces
- Reduced contamination in curbside recycling streams

These benefits are particularly relevant in areas with high beverage consumption and limited recycling participation.

Improved Material Recovery and Downstream Value

By separating beverage containers at the point of return, reverse vending systems can improve material quality and recovery rates. Cleaner, source-separated materials may:

- Reduce processing costs at material recovery facilities
- Improve downstream recycling efficiency
- Support more reliable glass and aluminum recovery for end markets

While market conditions vary, higher-quality recovered materials generally reduce system-wide inefficiencies.

Behavioral Design as a Cost Stabilizer

Basoro's behavioral design approach also contributes to cost control by:

- Encouraging repeat participation without continuously increasing incentive values
- Reducing misuse and contamination through clearer user interactions
- Supporting predictable usage patterns that improve servicing efficiency

By increasing participation efficiency, behavioral optimization can improve the cost-per-ton diverted without proportionally increasing operating expenses.

Reverse Vending Equipment Partnerships

Basoro works with established reverse vending machine vendors and equipment providers to support reliable deployment and servicing. This allows programs to leverage commercially proven hardware while maintaining flexibility in vendor selection and system configuration.

Basoro's role is to integrate equipment, incentives, and infrastructure into a cohesive program aligned with municipal priorities rather than promote a single proprietary machine.

Section C3: Accepted and Prohibited Beverage Containers

Accepted Beverage Containers

Basoro's reverse vending solution is designed to support the collection of commonly used beverage containers, consistent with municipal waste diversion priorities. Accepted materials typically include:

- Aluminum beverage cans
- PET plastic beverage bottles
- Glass beverage bottles

Acceptance parameters are configurable based on the capabilities of the selected reverse vending machines, program objectives, and downstream recycling requirements. Container validation is used to confirm material type and eligibility prior to incentive issuance.

Prohibited or Restricted Materials

To protect system integrity and material quality, certain items may be excluded from acceptance, including:

- Non-beverage containers
- Containers that are excessively contaminated or damaged
- Items outside defined size, weight, or material specifications
- Containers not compatible with downstream recycling processes

These restrictions help minimize contamination, reduce maintenance issues, and support higher-quality material recovery.

Program Flexibility

Basoro recommends that acceptance criteria be established collaboratively with the City, DPW, and downstream recycling partners to ensure alignment with existing recycling contracts and processing capabilities. Acceptance rules can be adjusted during pilot phases to reflect observed usage patterns and operational considerations.

Section C4: Cartons, Pouches, and Aseptic Containers

Overview

Some reverse vending systems can be configured to accept additional beverage packaging types, such as cartons, pouches, or aseptic and gable-top containers. However, the feasibility of accepting these materials depends on a combination of equipment capabilities, contamination risk, and downstream recycling capacity.

Technical and Operational Considerations

Acceptance of cartons or aseptic containers may require:

- Specialized machine calibration or sensing capabilities
- Clear differentiation between recyclable and non-recyclable packaging
- Verified downstream processing partners capable of handling these materials
- Additional contamination controls and user guidance

Pouches and flexible packaging generally present higher contamination and sorting challenges and may not be suitable for early-stage deployment.

Recommended Approach

Basoro recommends that cartons, pouches, or aseptic containers not be included in initial pilot deployments unless there is clear downstream demand and processing capacity. Instead, these materials can be evaluated during later phases once core beverage container recovery is established and operational data is available.

This phased approach reduces risk and allows the City to focus early efforts on materials with the highest diversion potential and market reliability.

Section C5: Support Needed from the City

Overview

Successful implementation of a reverse vending machine program requires coordination between the operating entity and the City. The level and type of City support can vary based on program

design, scale, and funding structure. Basoro's model is intentionally flexible to accommodate different levels of municipal involvement.

Potential City Support During Pilot and Early Phases

Depending on program structure, City support may include:

- **Siting support**, such as access to City-owned land, buildings, or facilities appropriate for public-facing infrastructure
- **Interagency coordination**, particularly with DPW and other departments involved in waste collection, recycling, and public-space management
- **Operational alignment**, including coordination with existing recycling contracts, hauling arrangements, and downstream processing partners
- **Limited operating or incentive support** during pilot phases to establish baseline participation and cost data
- **Community outreach and visibility support**, helping ensure residents are aware of and trust the program

Basoro does not assume all forms of support are required; rather, these elements can be combined or scaled based on City preference.

Role Definition and Partnership Structure

Basoro envisions the City's role as that of a **partner and facilitator**, rather than a day-to-day operator. Basoro would manage system integration, monitoring, and optimization, while working collaboratively with City staff to ensure alignment with municipal goals and operational constraints.

Clear role definition at the outset helps:

- Reduce administrative burden on City staff
- Avoid duplication of effort
- Ensure accountability across partners

Flexibility for Future Program Design

Basoro recognizes that the City may wish to refine its level of involvement over time. Pilot deployments can be structured to test different partnership models, including variations in siting, funding participation, and incentive administration, before committing to a long-term approach.

Section C6: Incentives Provided in Exchange for Returned Beverage Containers

Overview

Incentives are a central component of effective reverse vending machine programs, particularly when the objective is to increase participation, reduce litter, and recover high volumes of beverage containers. Basoro's system is designed to support flexible, configurable incentive models that can adapt to municipal priorities, funding structures, and program evolution over time.

Rather than relying on a single incentive mechanism, Basoro's approach allows incentive structures to be adjusted, combined, or expanded as program needs change.

Incentive Types and System Flexibility

Basoro's platform supports multiple incentive mechanisms, including:

- **Direct cash payments**, where funding and compliance structures are defined
- **Cash-equivalent incentives**, such as prepaid cards, transit credits, parking credits, or vouchers
- **Hybrid incentive models**, combining cash and non-cash incentives within a single program

The system is designed to be interoperable and vendor-agnostic, enabling incentives to be issued regardless of the reverse vending machine manufacturer and allowing future integration with additional systems as needed.

Local Economic Participation

In addition to resident-facing incentives, Basoro's system can support participation by local businesses as optional reward sponsors, allowing incentives to circulate within the local economy. This approach enables small and local businesses to engage without assuming operational responsibility for reverse vending infrastructure.

Participation by local businesses can be structured as:

- Optional supplemental incentives layered onto core, City-supported incentives
- Time-bound or location-specific offers tied to pilot deployments
- Pilot-tested engagement models evaluated for effectiveness and equity

This flexibility allows municipalities to explore economic co-benefits without requiring private participation.

Behavioral and Equity Considerations

Basoro's incentive architecture is informed by behavioral design principles and ongoing validation work, including collaboration with university students and community stakeholders. This work helps inform:

- Which incentive types most effectively motivate participation and repeat engagement
- How incentive clarity and transparency influence trust in public systems
- How programs can avoid stigmatization while remaining accessible across income levels

This design process supports incentive systems that are both effective and dignified, particularly in diverse urban environments.

Program Control and Adaptability

Incentive models can be aligned with per-container or weight-based funding structures where required by program design. Incentive values, caps, and issuance rules are configurable and can be adjusted over time based on:

- Observed participation rates
- Budget constraints
- Desired cost-per-ton diversion outcomes

Basoro's flexible system design allows municipalities to refine incentive strategies during pilot phases and adjust them over time without requiring a complete program redesign or new equipment procurement.

Section C8: Staffing Needs for Implementation and Servicing

Overview

Reverse vending machine programs can be designed to operate with relatively modest staffing requirements, particularly when systems are monitored remotely and servicing schedules are informed by real-time usage data. Basoro's approach emphasizes operational efficiency and clear role definition to minimize administrative and staffing burdens on municipal partners.

Basoro's platform is designed to minimize operational staffing requirements through integrated user education and guidance delivered directly through the Basoro mobile application and machine interface. These tools provide step-by-step instructions, recycling guidance, incentive explanations, and real-time feedback to participants, allowing most locations to operate effectively without permanent on-site staffing.

In some deployment contexts, however, staffed collection points may offer additional benefits such as community outreach, user assistance, and local workforce opportunities. Basoro supports these models where appropriate, particularly during early pilot phases or in locations where

additional engagement or accessibility support may be beneficial. The appropriate balance between staffed and unstaffed operations would be determined collaboratively with the City during program design.

Typical Staffing Functions

Staffing needs may include:

- **Periodic servicing and collection**, including emptying containers and routine maintenance
- **Remote monitoring**, to track machine status, capacity, and performance
- **Program administration**, such as reporting, coordination with partners, and issue resolution
- **Customer support**, to address user questions or technical issues as they arise

These functions can be centralized or distributed depending on program scale and operational preferences.

Use of Local and Partner Resources

Basoro's model allows for flexibility in how staffing functions are fulfilled, including:

- Use of existing municipal or contracted service providers for collection and hauling
- Partnerships with local vendors for maintenance and servicing
- Optional engagement of students or workforce development participants in non-critical roles, where appropriate

This flexibility allows programs to align with local workforce priorities without increasing complexity.

Operational Efficiency Through System Design

Remote monitoring and data-informed servicing schedules help:

- Reduce unnecessary site visits
- Improve response times to maintenance needs
- **Optimize collection frequency based on actual usage**

These efficiencies support predictable operating costs and reliable service delivery.

Section C9: Downstream Recycling and Material Processing

Overview

Effective reverse vending machine programs depend not only on collection, but also on reliable downstream recycling pathways. Basoro's approach is designed to integrate with existing municipal recycling systems and downstream processors rather than replace or duplicate them.

Material Handling and Routing

Collected beverage containers are consolidated and routed to appropriate downstream vendors based on material type and local recycling arrangements. Typical pathways include:

- Aluminum and plastic containers routed to certified material recovery facilities (MRFs)
- Glass containers routed to facilities capable of handling source-separated glass or glass aggregates

Routing decisions are informed by:

- Existing municipal recycling contracts
- Local and regional processing capacity
- Material quality and contamination considerations

Basoro works collaboratively with municipal partners to align collection and routing practices with established systems.

Material Quality and Contamination Reduction

Reverse vending machines support improved material quality by:

- Separating materials at the point of return
- Reducing contamination common in curbside recycling streams
- Limiting exposure to breakage and mixed waste

Higher-quality materials can reduce downstream processing challenges and improve recycling outcomes, particularly for glass.

Alignment with Local and Regional Recycling Goals

Basoro's system is designed to support municipal waste diversion and recycling goals by:

- Increasing capture rates for high-volume beverage containers

- Reducing litter before materials enter waste streams
- Improving the reliability of recovered materials for recycling markets

This approach complements existing recycling infrastructure and supports broader regional waste management objectives.

Section C10: Estimated Waste Reduction and Diversion per Machine

Overview

The amount of waste diverted by a reverse vending machine varies based on participation rates, site characteristics, incentive structure, and material mix. As a result, diversion should be evaluated using participation-based assumptions rather than theoretical machine capacity.

Basoro recommends using pilot deployments to establish localized diversion benchmarks before scaling.

Participation-Based Diversion Assumptions

Key factors influencing diversion include:

- Foot traffic at the deployment site
- Frequency of repeat participation by users
- Incentive type and value
- Proximity to beverage retail or consumption locations
- Community awareness and trust in the program

Based on observed participation patterns in comparable settings, a single reverse vending machine deployed in a high-traffic public location may divert several tons of beverage containers annually, with higher diversion potential at sites with strong incentive uptake and visibility.

Lower-traffic or early-stage sites may divert less initially, with volumes increasing over time as awareness and repeat participation grow.

Material Mix Considerations

Diversion totals depend on the mix of materials returned, including:

- Aluminum cans
- Plastic beverage bottles

- Glass beverage bottles

Glass containers often represent a significant share of weight diverted, while aluminum and plastic contribute disproportionately to volume and litter reduction benefits.

Importance of Pilot Evaluation

Basoro emphasizes the importance of using pilot data to:

- Establish realistic diversion ranges per machine
- Evaluate seasonal and neighborhood-level variation
- Compare cost-per-ton diversion across sites
- Inform decisions around siting, incentives, and scaling

This approach allows municipalities to ground future program design and budgeting in observed performance rather than estimates alone.

Section C11: Other Quantifiable Environmental and Economic Benefits

Overview

In addition to direct waste diversion, reverse vending machine programs can generate secondary environmental, economic, and community benefits when designed as integrated public infrastructure. These benefits complement core diversion goals and can be measured or evaluated alongside primary program metrics.

Environmental Co-Benefits Beyond Diversion

Additional environmental benefits may include:

- **Reduced litter in public spaces and waterways**, particularly from glass and beverage containers
- **Lower greenhouse gas emissions** associated with material recovery compared to landfilling or incineration
- **Reduced contamination in curbside recycling streams**, improving system efficiency

Where reverse vending infrastructure is paired with on-site solar generation and battery storage, additional benefits may include:

- Reduced grid electricity consumption
- Increased resilience of public recycling infrastructure
- Lower long-term operating emissions associated with system operation

Ecological Impact Commitments Through Nonprofit Stewardship

Through the Basoro Sustainability Foundation, Basoro supports collective ecological impact initiatives tied to verified recycling activity and program milestones. These initiatives may include native tree planting and reforestation efforts implemented in partnership with conservation organizations.

Rather than linking ecological actions to individual transactions, Basoro's model emphasizes aggregated, program-level commitments, allowing municipalities to track cumulative environmental outcomes alongside diversion metrics.

These commitments are designed to be transparent, measurable, and aligned with regional ecological priorities.

Local Economic Participation and Small Business Engagement

Basoro's incentive system can optionally support participation by local businesses as reward sponsors, creating opportunities for incentives to circulate within the local economy.

Potential economic benefits include:

- Increased foot traffic and customer engagement for participating businesses
Local retention of incentive value rather than leakage to national platforms
- Opportunities for small businesses to participate without managing recycling operations

Participation by local businesses is optional and can be piloted, evaluated, or scaled based on City preference.

Illustrative Example: Local Coffee Shop Participation

As an illustrative example, a neighborhood coffee shop could choose to participate as a reward sponsor by offering a modest incentive (e.g., a discounted beverage) to residents who recycle at nearby reverse vending machines. Such participation can:

- Encourage repeat recycling behavior
- Increase visibility of the program within the neighborhood
- Drive incremental foot traffic to the business

This example is provided for illustration only; actual incentive structures would be defined collaboratively and evaluated during pilot phases.

Section C12: Potential Barriers to Implementation

Overview

As with any public-facing recycling infrastructure program, there are potential barriers that may impact implementation and performance. Identifying these considerations early allows municipalities to design programs that are resilient, equitable, and operationally sustainable.

Basoro's approach emphasizes anticipating and mitigating these barriers through pilot-based deployment, flexible system design, and collaborative planning.

Funding Stability and Incentive Sustainability

One of the primary considerations for reverse vending machine programs is the availability and stability of funding to support incentives and ongoing operations. Participation rates and incentive uptake can vary by location and over time.

Basoro addresses this consideration by:

- Designing incentive structures that are configurable and adjustable over time
- Recommending pilot deployments to establish realistic participation and cost benchmarks
- Supporting multiple incentive types to allow flexibility if funding priorities evolve

Public Awareness, Trust, and Participation

Adoption of new public infrastructure can be influenced by:

- Resident awareness and understanding of how the system works
- Trust in incentive delivery and program legitimacy
- Perceived convenience and accessibility

Basoro's behavioral design approach, informed by real-world validation and community engagement, is intended to reduce friction, improve clarity, and support repeat participation.

Site Conditions and Infrastructure Constraints

Potential site-related considerations include:

- Availability of suitable public or semi-public locations
- Electrical access or site preparation requirements
- Physical security and visibility

Basoro mitigates these challenges through flexible siting strategies and, where appropriate, clean-powered or low-grid infrastructure configurations.

Operational and Maintenance Considerations

Like all mechanical systems, reverse vending machines require regular servicing and maintenance. Delays or inconsistencies in servicing can impact performance and user trust.

Basoro's use of remote monitoring and data-informed servicing schedules helps:

- Anticipate maintenance needs
- Reduce downtime
- Improve response times

Policy and Program Evolution

Municipal priorities, funding mechanisms, and regulatory frameworks may evolve over time. Programs designed with rigid assumptions can struggle to adapt.

Basoro's system is intentionally designed to be modular and adaptable, allowing program elements—such as incentive models, equipment vendors, or siting strategies—to be adjusted without requiring a complete redesign.

Section C13: Fraud Prevention and System Integrity

Overview

Programs that offer incentives in exchange for returned beverage containers must include safeguards to protect against misuse, duplication, and system manipulation. Basoro's approach to fraud prevention emphasizes clear rules, **verifiable transactions, and auditability**, while maintaining a simple and accessible user experience.

Container Validation and Eligibility Controls

Reverse vending machines integrated with Basoro's system use container validation to confirm that returned items meet defined eligibility criteria before incentives are issued. Validation parameters can include:

- **Material type and container characteristics**
- **Size and weight thresholds**
- **Machine-specific acceptance rules**

These controls help prevent ineligible or non-beverage items from generating incentives. Where machines employ barcode scanning, weight validation, or AI-based vision recognition, Basoro's system can incorporate validation outputs into unified audit logs.

Transaction and Session Controls

Basoro's system supports transaction-level controls designed to reduce misuse, including:

- **Defined session limits** to prevent excessive or automated returns
- **Time-based or volume-based thresholds**
- **Detection of anomalous usage patterns**

These safeguards can be adjusted over time as participation patterns and risk profiles evolve.

Auditability and Program Oversight

All incentive-related activity is recorded in verifiable, tamper-resistant transaction logs that support:

- Program auditing and reporting

- Review of incentive issuance volumes
- Investigation of potential misuse or irregular activity

Records are maintained in a manner that supports transparency and accountability while respecting user privacy.

Data Protection and Privacy

Basoro's system is designed to be privacy-aware, collecting only the data necessary to operate and evaluate the program. Data is aggregated for reporting and planning purposes, and individual-level data is not used for surveillance or unrelated purposes.

Adaptability to Emerging Risks

Fraud risks and misuse patterns can change over time. Basoro's system architecture allows program rules, thresholds, and controls to be updated as needed without requiring hardware replacement or program redesign.

This adaptability supports long-term system integrity as programs scale or evolve.