Circular Cities

A proposal for a privately-funded
Circular Cities infrastructure for

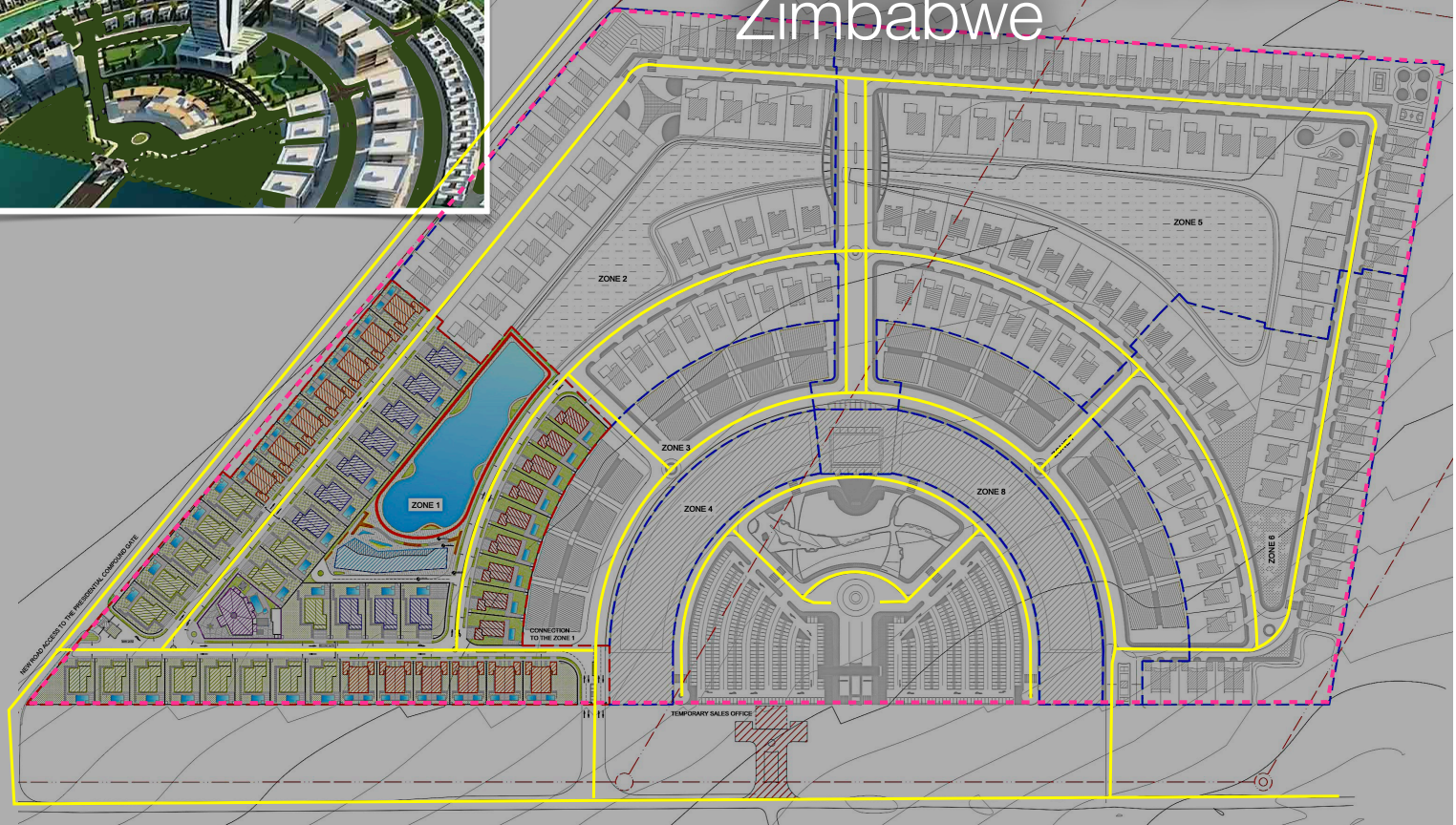
Zim Cyber City, New Mount Hampden, Zimbabwe

15.7K pop. on 0.5 sq km (0.5 sq km total)
2.6K residential units
12K sq m commercial space
18 hectares for farming
4 hectares for industry
2.5 km podway with 55 pods

Sustainable • Scalable • Efficient • Low cost
Resilient • Convenient • Car-free
Walkable • Affordable • Safe • Healthy

70% of city covered by farmlands or green space
14.7M watts of installed solar
28% of food is grown within the city
GHG reduction of 2.9K tonnes CO2e per year

Zim Cyber City
New Mount Hampden
Zimbabwe



Transit X™ · Podway Development · Capgemini

We are proposing to develop Zim Cyber City as a Circular City with the infrastructure funded by private investors. Circular Cities deliver a vibrant green economy, a low cost of living, and a high quality of life that makes for a happy, productive, and healthy society. See Circular Cities website

Green transportation

Podways provide convenient, solar-powered transportation for people, freight, and packages. Most daily needs can be met within a 5 minute trip. Stops are conveniently located on every block and at every large building. Private podways can enter buildings and stop at floors and individual units. High-speed podways connect to airports and nearby cities.

Benefits for Business & Industry

Circular Cities attract businesses due to the low cost of energy, availability of public transportation, and lower taxes.

Renewable energy is generated and stored locally without occupying land, lowering the cost of energy for both businesses and residents.

All businesses have access to reliable, low-cost, high capacity podways. This lowers the cost of transporting goods, and increases the size of the worker pool.

Employees don't need a car to get to work. Commuting via podways is fast, safe, reliable, and stress-free — lowering employee turnover.

Circular Cities are more efficient and less costly to run — resulting in lower taxes.

Circular Cities feature green spaces and high density

Green & Sustainable

100% renewable energy

Generates renewable energy over distributed grid

Circular Cities include a distributed grid to connect distributed generation, storage, and managed loads. Businesses and homes benefit from low-cost energy.

Batteries and managed loads

On-demand loads and distributed storage makes the electrical grid more resilient and dependable.

Integrated utilities

Utility lines are protected inside the podway to improve resiliency and dependability. High-capacity fiber optic telecom and wireless towers are hidden in the podway.

Negative Carbon Footprint

Circular Cities emit no greenhouse gas emissions from transportation or housing. Our approach minimizes embodied carbon in structures and vehicles while using materials that sequester carbon.

Organic and Recyclable materials

Circular Cities use materials that are long-lasting, compostable, and recyclable. Most structures are made of wood rather than concrete and steel.

Pollution free

The goal of Circular Cities is to create a circular economy and eliminate most pollution. This includes carbon emissions, air pollution including all fumes and most particulates. Water runoff from impervious surfaces is eliminated. Reducing or eliminating packaging and single use plastics. Minimize light pollution. The need for sewers, storm water systems, and centralized waste water treatment plants is eliminated. Solid waste is reduced with systems that promote repair and reuse.

Resilient

Circular Cities are designed to continue operating in floods, extreme heat waves, pandemics, and severe storms. Cities can be rapidly evacuated if necessary.

Green, Blue & Farmland

Green and open spaces supplant roadways and parking lots. This lowers temperatures and eliminates the heat island effect in typical cities. Farmland and waterways are integrated into the city.

Efficient

Circular Cities are designed to efficiently use resources — including land, food, electricity, heat, natural light, and water. Buildings are designed with many passive features that use no energy — including thermal storage and climate control that takes advantage of natural temperature differences.

Self-sufficient

As much as practical, Circular Cities are designed to create and reuse their own energy, water, waste, food, and goods.

Health, Safety & Privacy

Circular Cities bring better health, safety, and privacy that improves the quality of life for all residents.

Health

Green spaces improve people's well-being and less pollution creates a healthier environment. Circular Cities improve access to health care, prevent the spread of diseases, eliminate stressful commutes, and encourage an active lifestyle.

Safety

Podways eliminate roadway-related incidents and most vehicle-related crimes. Pods are monitored and inaccessible when parked. Eliminating parking lots, cars, buses, and trains removes the places where many crimes occur.

Circular Cities provide affordable housing to eliminate homelessness and poverty — improving everyone's safety.

Privacy

Circular Cities provide individual privacy but maintain the accountability needed to keep people and property safe.

Every podway stop may have access controls (a gated community) based on time, guest list, or banned list.

Future-proof: Scalable & Flexible

The climate is rapidly changing, so Circular Cities are designed to be resilient to storms, floods, fires, and earthquakes. Circular Cities can work in all climates and topographies. Buildings can be of any architectural style.

Circular Cities scale so that they can be expand as needed. Multi-use, standard-height buildings easily adapt to new uses, rather than needing to demolish and rebuild them. Because most utilities are above ground, there is minimal disruption during construction or maintenance.

Low Risk

Circular Cities are designed to be low risk. Both structures and infrastructure can be incrementally developed. This minimizes the risk of low asset utilization (aka Ghost Cities). By building to current demand, you minimize non-revenue producing assets. This method also reduces the interest during construction (IDC).

Podways and most structures are manufactured in a factory rather than built on-site. This reduces disruption, improves quality and reduces costs.

Low Cost and Long Lasting

Circular Cities are designed to be inexpensive to build, inexpensive to run, and built to last — over 100 years..

Low cost infrastructure

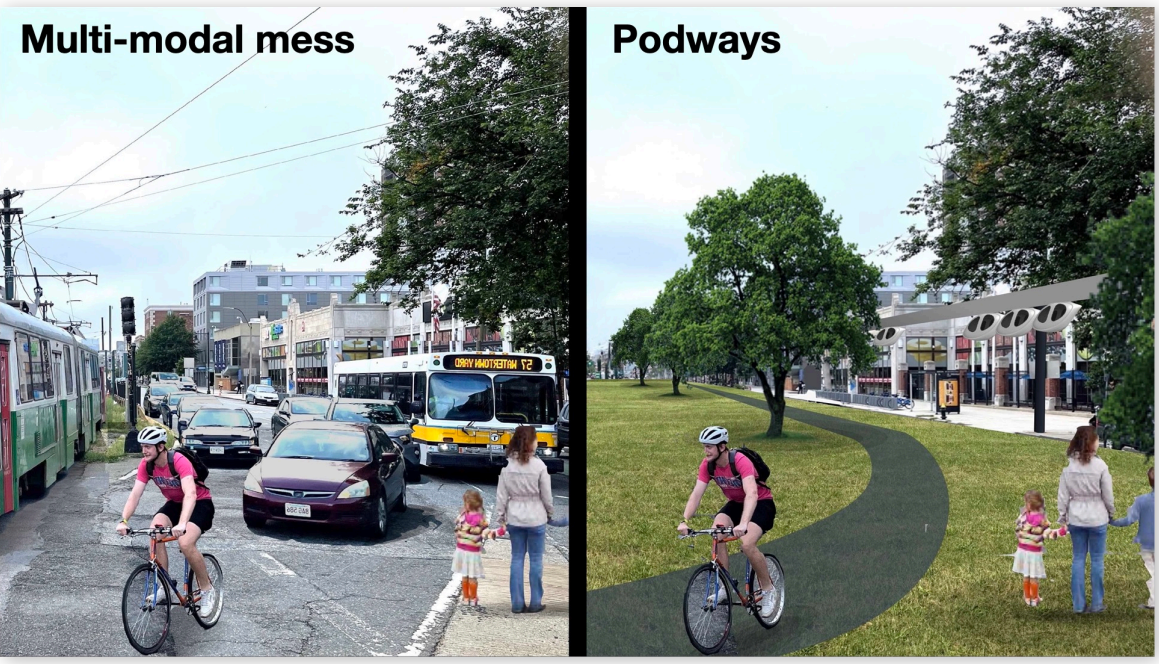
Podways lower the cost of utilities and infrastructure by supplanting expensive roadways, highways, bridges, and parking. *Building* a podway is less costly than a few years of *maintaining* conventional transportation systems. *Adding* a new podway is less costly than electrifying the existing transportation systems.

Podways carry and protect utility lines, reducing potential damage from storms and flooding.

Low cost structures

Buildings are multi-purpose and can adapt to new uses in the future. Buildings are low cost because they are low-rise and manufactured. With private podways, no building needs structured parking, hallways, elevators, or stairwells — further reducing their cost and improving safety.

Most buildings are made from engineered wood. A lighter low-rise building has a smaller foundation. Since all buildings are convenient to podway transportation, land is less expensive at a city's center.



Which city would you rather live in?

Passive and ultra-efficient climate control reduces operational expenses. Automation and AI (Artificial Intelligence) further reduce the cost of maintenance.

The structures of Circular Cities feature innovative designs to lower their cost, increase their lifespan, and improve the quality of life for the building's users.

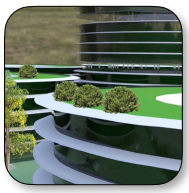
NOTE: *Circular Cities can be any architectural style. Images show only one possible style.*

Circular Cities

Solutions and Partners

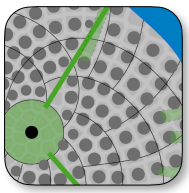
Transportation

Podways provide convenient, low-cost, and high-capacity transport for people and goods. Local and over long-distances.



Buildings

Provide flexible, efficient multi-use buildings to lower costs, increase resiliency, and improve the quality of life for both residents and businesses.



New Developments

New types of layouts provide resiliency without the typical constraints imposed by topology, transportation and sanitation systems.

Healthcare

Pods enable in-home health care and efficient equipment utilization. Medical pods provide testing, diagnostics, and secure communication with provider.

Privacy & Security

Significantly reduce cyber and real-world crimes. Protects privacy while providing necessary accountability to enforce laws.

High-speed Data

Fiber-optic cables are protected inside the podway. Micro-antennas (5G) can be placed on top of podway. Infrastructure is secured.

Waste Management

Clean, silent, and on-demand waste management collection at dock or door. Innovative recycle and reuse systems are possible using podway.

Education

Fast, safe and flexible trips to school without buses. Educational content is available while traveling in a pod. Pods get children to and from school safely.

Postal Service

Fast, reliable delivery for letters, packages, and on-demand delivery. Secure delivery to dropbox at posts or stops. Low cost and zero emissions.

Agriculture and Farming

Increase yield more than 3X with year-round production using 90% less water and no fertilizers. Resilient to extreme heat.

Renewable Energy

Distributed solar and wind energy generation without land use or transmission losses. Co-located on podways, buildings, and farmlands.

Distributed Grid

Safe, distributed energy storage and physically protected cables. Instant auto-balancing with managed loads. DC distribution and transmission.

Public Safety & Emergency

Circular Cities eliminate vehicular-related incidents. Enable new methods to improve police, fire, and emergency response.

Water & Sanitation

Over 90% reduction in water use. Dry toilets eliminate need for sewers and centralized water treatment. Fresh and filtered water is delivered via podways.

Disaster Response

Fast emergency response and high-capacity evacuation during natural disasters. Podways continue to operate in floods and high winds.

Activeways

Healthy, active lifestyles encouraged by paths along podways for people, bicyclists, and other non-motorized vehicles.

Parks & Waterways

Green spaces can be engineered to mitigate urban flooding and provide waterways for recreation and natural beauty.

Administration & Governing

Innovative tools for decision making and problem solving can help facilitate cooperative and rational choices that benefit society.

Problems with **New Developments**

Greenfield development often runs into these **problems.** We have the **solutions** ✅

❌ **Lack of clear vision or strategy**

✅ We can help you articulate a clear and compelling vision that can be implemented in a reasonable timeframe

❌ **Limited land availability**

✅ With better transportation, higher density, and use in hilly terrain, Circular Cities are viable in many more locations.

❌ **Limited water rights**

✅ Circular Cities use 90% less water

❌ **High cost and poor financial viability**

✅ Our solutions are low-cost with a viable business model—even in developing countries

❌ **Environmental approval delays**

✅ Podway City development is the most environmentally friendly

❌ **Overbuilding**

✅ Circular Cities can be developed in phases without needing to build expensive infrastructure to meet potential future needs

❌ **Road-centric & multi-modal mess**

✅ Circular Cities provide a better alternative to road-based infrastructure.

Problems with **Smart Cities**

Smart City developers often run into these **problems**. We have the **solutions** ✅

❌ **Poor resiliency**

✅ Circular Cities protect from flooding, severe heat, fires, storms, and earthquakes.

❌ **Lack of reliable energy sources**

✅ We build local renewable generation and storage with demand-side management. Provides reliable renewable energy.

❌ **Congestion**

✅ Automated Podways provide the capacity of trains with the convenience of cars.

❌ **Data privacy and trust issues**

✅ Distributed public key infrastructure assures privacy while maintaining accountability.

❌ **Cyber Threats**

✅ Less complex systems are easier to defend. Podways are less complex and the private network reduces the severity of impact compared to a multi-modal environment.

Safe
Quiet
Green
Walkable

Financial Viability

The cost of infrastructure is $16.4M ($6.3K per household or $2.9M per hectare). The annual budget is estimated to be $1.5M ($574 per household). The financials make the project attractive for our investment partners when developed in phases. A financial summary with a 10-year pro forma is available upon request.

Next Steps

A feasibility study is available under a non-disclosure agreement by emailing hello@circularcities.com. The feasibility study provides additional details on everything mentioned in this overview — as well as many other topics.

We look forward to meeting to discuss how we can work together and answering your questions.

Sincerely,

Circular Cities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Prepared for Transit X under NDA

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Zim Cyber City, New Mount Hampden, Zimbabwe

For governments, developers, and to conduct due diligence and analyze business, financial, and technical feasibility of this Podway City project.

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