

Bethlehem Discovery Park — Feasibility Brief

Stage: Planning phase · Version 1.3 · October 19, 2026 · Independent community project

Public stages: planning phase → design → building → open. Version history: v0.1 first research round; v0.2 fact-checked second round; v1.0 the owner's chosen direction for the project (not a permit or an agreement from anyone else), aligned with Project OS conventions; v1.1 Gall Farm correction, audit fixes, research gaps filled; v1.2 no income tests and two more Gate 1 conditions, decided under the owner's delegation (no new research); v1.3 "In planning" replaces the earlier framing, and v1.3 also moves the public wording to "Planning phase", both on the owner's direction, with the details decided under the owner's delegation: the main location is being finalized, nothing is funded or built yet and nothing is in writing (wording only, no new research), plus build and long-term roles in Section 11 on the owner's direction.

Planning phase. An independent plan; nothing is funded or built yet. No engineering has been done, and this is an independent project, not an official project of any agency or institution named. Nothing has been agreed in writing with the City or with any landowner or agency, and no landowner has confirmed a site in writing. Every layout in this brief is a test fit on a sample parcel (illustrative, not a site plan).

Purpose (shared across our projects): make essential things simpler, more accessible, less wasteful, and affordable or free wherever practical.

Contact: David Fischbarg, organizer. There is no public contact address yet; a project address, not a personal one, will be added once the project has its own domain (docs/DECISIONS.md #32).

Related projects, kept separate: the separate projects in the same family include Bethlehem Connect (transportation), the Ocean Discovery Center (aquarium and ocean learning) and the Bethlehem Space & Exploration Center. The website lists only the projects this park has an optional link with, so it does not list the Space & Exploration Center (decided Oct 19, 2026; docs/DECISIONS.md #27). Two more are named on the owner's direction (relayed by Project OS, Oct 21, 2026; docs/DECISIONS.md #49): **Aethon**, ocean exploration work that is part of the same mission (Project OS docs/PHILOSOPHY.md lists it in the same family and keeps its data separate), with which this park shares methods, never data; and the **Energy & Logistics Hubs**, a separate planned project that would supply natural power region by region (Section 9). Links between them are optional; this park depends on none of them, and none depends on it. Project OS can coordinate them, but no project depends on Project OS either.

The four tests

Test	How Bethlehem Discovery Park meets it
Simpler	One small pilot first; a few low-maintenance rides chosen for reliability; plain-language signs and maps
More accessible	Free entry to the grounds; accessible routes to every attraction; sensory-friendly hours; transit and trail access preferred
Less wasteful	Reuse an existing or under-used site before new land; native plants instead of irrigated turf; free water refill; reusable dishware; repair before replace
Affordable or free where practical	Grounds, play, gardens, water and restrooms free every day; rides free whenever someone reliably gives or pays for them, otherwise kept as low as possible (about \$2-\$4 a ride, with free-ride days). Real costs and who pays are stated in Section 10

1. Summary

The idea. A welcoming place in the greater Bethlehem / Lehigh Valley area where children, teens, adults, families and seniors can play, learn, enjoy nature and spend time together without everything being expensive. It should feel like a shared community park first and a small attraction second. Entry to the grounds would be free. Rides would be free

whenever someone reliably gives or pays for them, and otherwise as low as possible (about \$2–\$4 a ride), with free-ride days protected.

Headline findings

1. **No large site is confirmed available.** Twelve candidate areas were screened in detail and six more were screened out. Section 3.3 also lists Bushkill Park, which was set aside as a precedent and possible partner rather than a site. Several places that look vacant are already committed:
 - Dutch Springs was sold for warehouses.
 - The Martin Tower site is cleared for 1,085 apartments.
 - Former Steel land is under nonresidential cleanup covenants.
2. **The leads worth asking about need direct inquiry, not assumptions.** These leads are research, not choices, and no landowner has confirmed a site in writing. The recommended first question goes to the regional planning agency, not to any landowner (Section 3.6).
 - **At least 70 acres kept for outdoor recreation** at the former Allentown State Hospital ("Northridge"). The developer's 2024 master plan sets aside ≈46% of the ≈195-acre site as open green space, mostly by the Lehigh River.
 - Northampton County's **365-acre Gracedale campus**, which is being replanned now.
 - **Pilot pieces in Bethlehem's own parks.** The city's 2026 "40 in 10" parks plan heard demand for inclusive play and splash pads.
 - **Gall Farm Preserve, for reference only (corrected in v1.1).** The county's "Gall Road" land is Gall Farm Preserve in Plainfield Township: about 149 acres the county bought in 2003 "to be developed into a regional park" (Verified). The county is already taking its own development steps (Section 3.2), so this is a county project to learn from, not a target for this park. It is about 12 miles straight-line from central Bethlehem (our estimate).
3. **The market gap is real but modest.** Nothing within about 15 minutes of Bethlehem combines free entry, \$2–\$4 rides, a carousel or train, and destination-scale inclusive nature play.
 - Dorney Park costs about \$60+ a day.
 - Knoebels proves the free-gate, pay-per-ride model but is about 1 h 40 min away.
 - Weona Park's \$2 carousel is about 30 min away and seasonal.
4. **Bethlehem Connect is a separate project, not an official or funded transit line.** No city, LANta, LVTS or PennDOT program by that name exists; the closest official item is the 2015–2016 "BethConnects" trail study (completed 2016). LANta is *cutting* evening and weekend service in 2026 and expects more cuts in January 2027. The park should rely on existing EBS bus lines, trails and shared parking. It keeps only an optional placeholder for a future Bethlehem Connect stop, assuming no route or service.
5. **Rides are tightly regulated in Pennsylvania, which is good.** The state requires:
 - annual state registration;
 - a sealed PA engineer statement for new ride types;
 - certified Qualified Inspector affidavits before opening and every 30 days;
 - 48-hour reporting of serious incidents;
 - operators aged 16 or older;
 - insurance at or above legal floors.

A carousel and a few family rides are manageable with professional operators. They are not a volunteer activity.

6. **Funding can work only with a public partner.** The large state capital programs require a public applicant: RACP (minimum \$1M project, 50% non-state match) and the Wind Creek gaming Local Share Account. A nonprofit can apply directly to DCNR C2P2, the state Greenways, Trails and Recreation Program (GTRP) and Neighborhood

Assistance Program credits. Operating costs must come from earned revenue and committed public support, not from donations.

Recommendation. Start small and earn each step:

- **Phase 0 (now – about 2 years):** listen, run pop-up "Discovery Days" in existing parks, form a nonprofit (with a fiscal sponsor at first), make the inquiries in Section 3.6 (a regional question first, naming no site), draft an operating budget structure (Section 10.5) and commission a market study.
- **Phase 1:** a Small Public Discovery Park (Scale A, ≈5–15 acres) as a pilot.
- **Phase 2:** the Family Attraction Park (Scale B, ≈20–35 acres), only after Gate 2 is passed.
- **Phase 3:** a Larger Regional Park (Scale C, ≈50–120 acres), only if Gate 3 is met: proven demand, sufficient land, an operating surplus and an environmental review (Section 12).

2. How this research was done – and its limits

Item	Detail
Method	Round 1: six desk-research streams (city sites, regional sites, competitors and precedents, regulation, funding and costs, transit and plans). Round 2: eight streams closing the round-1 gaps. Every round-2 claim went to an independent fact-checker who tried to refute it. Results: 65 confirmed, 14 corrected, 86 could not be checked within the search budget, 0 refuted. Both rounds ran October 18, 2026. v1.1 (same day): the owner's Gall Farm correction from county records, plus three focused gap searches (electricity service, transit and trail access per site, missing source links) using about 70 web searches.
How round-2 facts are marked	Checked = confirmed or corrected by the second, independent search. Single-source = from an official page but not independently re-checked. Unchecked claims from non-official sources were left out. In v1.1 additions, Checked means two or more independent or official extracts agree.
What was accessible	Web-search results and extracts. Full documents, county parcel GIS, FEMA flood maps and municipal websites could not be opened from the research environment (network policy). A shared limit of 200 searches was reached, so some topics were not finished.
Labels used	Verified = official or primary source (seen as a search extract); Reported = news or secondary source; Assumption = planning assumption made for this project; Unknown = not established.
What must happen before outreach	Confirm parcel boundaries, ownership, zoning, flood zones, wetlands, habitat and utilities with the Lehigh and Northampton County assessment/GIS offices and the relevant municipality.
Not done	No engineering, surveying, traffic study, environmental testing, appraisal, market study, cost estimate or legal review.

Topics still open are listed once, in Section 16 ("Still open"), so the list cannot drift between sections.

3. Site search

3.1 Screening criteria

Each area was screened against seven criteria. Scores: 3 favorable · 2 workable · 1 difficult · 0 blocking · ? unknown.

1. **Land availability and control.** Is it really available, or does it only look vacant?
2. **Size fit** for Scale A, B or C.
3. **Environmental constraints:** floodplain, wetlands, contamination, protected habitat, preserved farmland.
4. **Access:** roads, LANta EBS or bus, trails, walkability.
5. **Utilities:** public water, sewer and power likely nearby.
6. **Neighbors:** noise, traffic, lighting compatibility.
7. **Plan or deed fit:** adopted plans, zoning, deed or bequest terms.

Scores are judgments to guide inquiry, not findings, and they are **not summed into a ranking**. A single blocking factor can outweigh several favorable ones.

Regional lens (owner's planning principle, relayed through Project OS, Oct 18, 2026): organize the region by function rather than one enormous parcel. The lens assigns:

- the airport and industrial corridor to logistics, energy and EV charging;
- a research district (for example Goodman / Mountaintop) to research and education;
- South Bethlehem to community recreation, ocean-science education and culture.

Public family facilities stay apart from potentially hazardous industrial operations. These are reference points, not selected sites. The lens agrees with the screening: airport and warehouse land is screened out, and former Steel parcels under nonresidential cleanup covenants rate Low for children's play. SteelStacks itself stays excluded, as the owner first asked.

3.2 Shortlisted candidate areas

#	Area	Size & owner	Status (date, label)	Outlook
1	Gall Farm Preserve (the county's "Gall Road" land), Plainfield Township, Northampton County (Verified)	≈149 ac (149.15 ac, Parcels A–E) · Northampton County (Verified)	Bought by the county in 2003 "to be developed into a regional park" (Verified). Leased farmland, woodlands and the Little Bushkill Creek; the Plainfield Township Recreation Trail runs through its western part; active county hunting area (Verified). The county is taking its own development steps (details below). ≈12 mi straight-line from central Bethlehem (our estimate)	Low: reference only; the county has its own plans
2	Former Allentown State Hospital ("Northridge") , east Allentown	≈195 ac · City Center (private), bought Sept 2022 for ≈\$5.5M	Mixed-use overlay adopted 2023 (4-3). City agreement requires ≥70 ac kept for outdoor recreation ; 2024 master plan shows ≈46% open green space, mostly by the river (Checked). Master plan and ≈202,000 sq ft K-8 school cleared; ≈10-year buildout with 1,000+ homes (Checked)	Medium , by partnership
3	Gracedale county campus , Upper Nazareth Twp	365 ac · Northampton County (Verified)	2026 County Executive plan: ≈700-bed nursing facility, medical offices, dialysis, workforce housing, retail; aims to pay for itself. Nursing home given one-star Medicare rating and a provisional state license; council created a Gracedale department 5-4. No council vote on the campus plan (Checked)	Medium , via public input
4	Bethlehem city parks (pilot pieces only)	722.23 ac of parks, 11.86 mi of trails · City	"40 in 10" master plan complete; implementation began March 18, 2026; 4,000+ people engaged (Checked); total plan cost Unknown (v1.1 found no source for an earlier single-source figure). Demand for inclusive and natural play and splash pads. Sand Island, Monocacy and Saucon parks flood; city will not rebuild Saucon pool in floodplain (Reported)	High for pilots / Low for rides
5	Wayne A. Grube Memorial Park , Allen Twp	≈200 ac · County (Verified)	Existing park with playground, softball, pavilions; about 50 of the 200 acres are developed parkland and the rest is farmed (Verified)	Medium for programs
6	Louise W. Moore Park , Bethlehem & Lower Nazareth Twps	≈100 ac · County (Verified)	Donated 1973 "to be developed as passive parkland"	Low-Medium
7	Housenick Park / Archibald Johnston Conservation Area , Bethlehem Twp	55.84 ac township + 36–48 ac county	Township park "solely for passive recreational activities"; Natural Heritage Area (Verified)	Low (nature-education partner)
8	Former Martin Tower site ("Tower Place")	≈53 ac · private	LVHN health buildings opened 2025; plan cleared Feb 2023 for 1,085 apartments, 200-room hotel, medical offices, "future development" section (Checked). No evidence that apartment or hotel construction had begun by 2026	Low-Medium

#	Area	Size & owner	Status (date, label)	Outlook
9	Bethlehem Golf Club	Unknown ac (18-hole par-71 Monocacy course, 9-hole executive course, range) · City	2026 proposed golf fund \$3.86M incl. \$2.04M equipment; city reinvesting (Verified, vote unconfirmed)	Low-Medium
10	Former Bethlehem Steel lands east of SteelStacks	Wind Creek 56 ac; Majestic 440+ ac; LVIP VII lots · private	Cleanup to nonresidential standards with recorded covenants (2001 on); LVIP VII lot cleared for warehouses Apr 2025. Wind Creek's 2019 idea: ≈300,000 sq ft indoor adventure/water park in Machine Shop No. 2 with a \$100M pledge; later described as "fluid", with no 2024–26 approval found (Checked)	Low (children's soil contact)
11	Palmer Park Mall, former Bon-Ton building	100,000+ sq ft building · private	Vacant anchor marketed for redevelopment incl. entertainment (Reported)	Medium, indoor only
12	Westgate Mall	≈22 ac · private	\$20M redevelopment complete; listed for sale 84% leased (Reported)	Low

Gall Farm Preserve, corrected in v1.1 (reference only, not a target). Earlier versions called this "the Gall Road property, likely Plainfield Township, acreage unconfirmed". County records now answer those questions:

- **Where:** Plainfield Township, Northampton County (Verified: township minutes and county pages).
- **Why the county owns it:** bought in 2003 "to be developed into a regional park" (Verified, county parks page).
- **Size:** about 149 acres: 149.15 acres in Parcels A–E, per the Northampton County Council agenda packet of March 7, 2024 (Verified). The county parks page describes four parcels, two north and two south of Gall Road.
- **Land:** leased farmland, woodlands and the Little Bushkill Creek, with steep slopes east of the stream. The Plainfield Township Recreation Trail runs through its western part (Verified). It is an active county hunting area (Verified, county hunting page).
- **The county's own steps:**
 - a \$300,000 DCNR C2P2 award in September 2022 "for the development of Gall Farm Preserve" (Reported);
 - Phase 1A reported as a parking lot, stormwater control and a trail connection (Reported);
 - a June 2024 council resolution supporting a "Phase I Development Grant" application (Verified, council agenda);
 - a 2019 master site development plan, referenced in a 2024 draft resolution (Reported, not re-confirmed).
- **Not known:** whether anything has been built, and any 2025–26 news (Unknown).
- **Location on our map:** an approximate point (40.777, –75.259) from a third-party listing (Reported, unverified). It is not a parcel boundary and must never be shown as one. About 12 miles straight-line from central Bethlehem (our estimate).
- **Stream:** the Little Bushkill Creek watershed is reported as High Quality–Cold Water Fishes (HQ-CWF) under PA DEP rules (Reported; source link still to add).
- **Fit for this park: weak.** The county has its own plans for the land, so this brief treats it as a county project to learn from, not a target.

SteelStacks was deliberately excluded, as requested.

3.3 Screened out

Area	Reason
Dutch Springs / Lake Hydra (Lower Nazareth & Bethlehem Twps)	Sold July 2022 for \$16.1M; ≈588,000 sq ft of warehouses; quarry used for dive training only (Reported)
Lehigh Valley International Airport land	Sold or leased for industrial use (260 ac FedEx, 308 ac Majestic lease); FAA release required for federally funded land (Verified)

Area	Reason
Bethlehem Landfill expansion area (Lower Saucon)	848-acre rezoning voided by court; easements reinstated; on appeal (Reported)
Willow Brook and Green Pond golf lands	Housing proposed or built (Reported/Verified)
Woodland Hills Preserve (Lower Saucon)	Township passive preserve bought with grants (Verified)
South Mall, Phillipsburg Mall, Whitehall Plaza	Re-tenanted or replaced by warehouses (Reported/Verified)
Bushkill Park (Forks Twp)	Operating private historic park in a floodplain. A precedent and possible partner, not a site (Reported)

3.4 What is unknown for every site

These must be checked before any site is discussed publicly as a candidate:

- **Parcel boundaries and ownership:** county assessment records and GIS.
- **Zoning:** whether "amusement" or "commercial recreation" is permitted, conditional or by special exception. The City of Bethlehem use table was not retrieved.
- **FEMA flood zones and floodway:** Lehigh River, Monocacy, Saucon and Bushkill creeks all flood. PEMA updated its floodplain development guide in June 2025.
- **Wetlands** (National Wetlands Inventory plus field delineation) and **protected species** (PA Natural Diversity Inventory search).
- **Preserved farmland and Agricultural Security Areas.** Preserved farms are generally under permanent agricultural easements and should be treated as unavailable.
- **Former industrial contamination:** Act 2 covenants. The PA DEP Land Recycling Program notes that playground use likely needs near-residential standards.
- **Utilities:** water, sewer (Act 537 plans), and electric service and capacity from PPL or Met-Ed (FirstEnergy Pennsylvania), depending on the site (electricity table below).
- **Access:** walking distance to an EBS stop or a regional trail (access table below). No candidate yet has a sourced distance to an EBS stop.
- **Traffic, noise and neighbors.**

What round 2 established about Bethlehem's rules and utilities (relevant if a site is inside the city or its sewer service area):

Topic	Finding	Label
Zoning	Zoning Ordinance is Part 13 of the Codified Ordinances, effective June 15, 2012, latest posted revision Aug 21, 2023. Use tables in Articles 1304 and 1305; definitions in 1302; use-specific rules in 1322	Checked
Zoning (detail)	§1305.01 has separate rows for "Recreation, Commercial Indoor" and outdoor commercial recreation. A use not listed is prohibited unless the Zoning Hearing Board grants a special exception (§1305.04). District-by-district permissions still to be read	Single-source
Food licensing	Bethlehem Health Bureau licenses and inspects food facilities, including mobile vendors, inside city limits (Article 1113, amended Nov 2025)	Checked
Water	City water comes from Wild Creek (1941) and Penn Forest (1958) reservoirs in Carbon/Monroe counties, ≈10 billion gallons combined storage	Checked
Water customers	≈36,400 customers (22,940 in the city, 13,496 outside) at end of 2019	Single-source
Wastewater	City plant permitted for 20 MGD but held to an administrative limit of 15.5 MGD since 2012 because of organic loading; a 2023 Act 537 study examined raising organic capacity	Checked
Wastewater service area	City plus 12 other municipalities in whole or part (incl. Bethlehem Twp, Hanover Twps, Hellertown, Fountain Hill, Freemansburg, Allentown, Salisbury, Lower Saucon)	Single-source

Topic	Finding	Label
Electricity (v1.1)	PPL Electric Utilities serves the City of Bethlehem: PPL's Northampton County territory list names the city with no "(part)" note, Met-Ed's list does not include it, and outage reports show PPL serving city customers. The PPL list seen is a 2008 tariff supplement and may have been replaced	Checked
Noise	Article 717 treats unnecessary noise as a nuisance; secondary summaries report no numeric decibel limits	Reported, unconfirmed
Climate Action Plan	Released Apr 12, 2021. Community targets vs 2017: –33% by 2025, –60% by 2030, net-zero by 2040; 2026 progress update published	Checked
Comprehensive Plan	2009 plan is the most recent; no named update found; a separate Complete Streets Plan began engagement in late 2025	Single-source

The wastewater limit matters: any site served by the city plant would need a capacity check before restrooms, a food pavilion or a splash pad are designed.

Electricity (v1.1 research, Oct 18, 2026). Pages could not be opened; every finding rests on search extracts. No utility has been contacted.

Topic	Finding	Label
Who serves the area	Two electric utilities: PPL Electric Utilities and Met-Ed . Met-Ed is now a rate district of FirstEnergy Pennsylvania Electric Company (FE PA): the PA PUC cleared the merger on Dec 7, 2023 and it closed Jan 1, 2024. This brief writes it as "Met-Ed (FirstEnergy Pennsylvania)". No co-op or municipal utility turned up	Verified
Overlapping territory	Many Northampton County townships are on both utilities' lists, including Allen, Bethlehem Twp, Lower Nazareth, Palmer, Plainfield and Upper Nazareth. There the utility depends on the exact parcel. Only PPL lists the City of Bethlehem, Hanover Twp, Lower Saucon Twp and Freemansburg; only Met-Ed lists the City of Easton. The PPL list seen is a 2008 tariff supplement; the Met-Ed list is undated	Verified
City of Bethlehem sites (city parks, Tower Place, Golf Club, former Steel lands, Westgate)	PPL (see the Bethlehem table above)	Checked
Wayne A. Grube Memorial Park	PPL: a 2022 PPL right-of-way agreement covers electric facilities on a county parcel at 1200 Willowbrook Road, Allen Twp (PA PUC docket U-2022-3030663). A visitor listing gives that address for the park, and the county puts the park entrance on Willowbrook Road	Checked
Northridge (Allentown)	PPL: a PUC filing lists Allentown as a PPL city, and PPL reports Lehigh County outages	Reported
Gracedale	Probably PPL: in 2012 PPL named Gracedale among facilities still without power after Hurricane Sandy. One old news source; not confirmed for the whole campus	Reported
Palmer Park Mall	Probably Met-Ed (FirstEnergy Pennsylvania): Palmer Township's directory lists Met-Ed and no PPL entry, and Met-Ed has a substation in the township. PPL's 2008 list also names Palmer Township	Reported
Louise W. Moore Park; Housenick / Johnston; Gall Farm (reference only)	PPL or Met-Ed (FirstEnergy Pennsylvania). Both serve these townships, and no source ties either one to these parcels	Unknown
Capacity at any site	Neither utility publishes site-level capacity. PPL discusses capacity with its Business Accounts group once there is a project and an expected load. Every site's "utilities" score stays a screening judgment	Unknown
New service (PPL)	Four steps: (1) talk with PPL Business Accounts about the project and expected load; (2) have an approved development plan, since work will not start until PPL has an approved plot plan; (3) submit a service application with a one-line diagram; (4) a separate work order for each building and for street lighting. Apply at least 8 months before primary service is needed and 12–18 months before three-phase secondary service. Requirements are in PPL's "Rules for Electric Meter and Service Installations" (REMSI). Request service before any electrical installation begins. Contact details are on PPL's REMSI page; two page versions differ, so confirm before use	Verified

Topic	Finding	Label
New service and solar connection (Met-Ed / FE PA)	FirstEnergy's Pennsylvania page lists a \$100 Level 1 interconnection fee, matching the state rule. Its new-service steps, contacts, lead times and other fees were not researched	Verified (Level 1) / Unknown
Solar interconnection (PPL, under 1 MW)	Level 1: certified inverter-based systems of 10 kW or less, \$100 fee. Level 2: inverter-based systems over 10 kW up to 2,000 kW, \$250 plus \$1 per kW. The state rule (52 Pa. Code §69.2104) gives the same Level 1 and 2 fees. A park array under 1 MW would usually be Level 2; for example, 200 kW would be \$250 + \$200 = \$450 in application fees (arithmetic only). Study and upgrade costs are not published (Unknown). Level 3 definitions and fees differ between sources and are left out until the code text is read	Checked
How to apply for solar (PPL)	Online through PPL's contractor portal, with a one-line diagram, site plan, equipment data sheets, the fee and a signed interconnection agreement. Nothing is approved until the fee is paid	Verified
Net metering (PPL)	Up to 3,000 kW at non-residential locations (over 50 kW needs a non-residential rate). Extra kWh in a month are credited at the full retail rate and carried forward; credits left at the end of the June–May year are paid at the "Price to Compare". A system may not be sized above 110% of the account's yearly use. Virtual meter aggregation needs the same customer, accounts within 2 miles, PPL territory and default supply. The PPL tariff PDF found is a 2019 version. Year-end payout rates for 2026 were seen only in one unconfirmed extract and are not used here	Checked

Access basis per site (v1.1 research, Oct 18, 2026). The planning stance (Section 3.5) prefers sites within ¼–½ mile of an EBS stop or a regional trail. LANta's timetable PDFs and stop maps could not be opened, so every row rests on search extracts. **No candidate has a sourced distance to an EBS stop (Unknown for all).** Two meet the trail preference from a source: Gall Farm (the trail runs through it) and Grube Park (listed as a Nor-Bath Trail access point). Before anyone states a distance, measure it with LANta's EBS stop locator or a trip planner.

Site	Nearest transit found	Regional trail	Label
Gall Farm Preserve (reference only)	No fixed LANta route; no EBS line nearby. Plainfield Twp was listed in the Flex Route 502 (Slate Belt) reservation zone in 2021–22 LANta guides (not re-confirmed). Nearest fixed route found: Route 217 at Wind Gap Plaza, distance Unknown	Plainfield Township Recreation Trail runs through its western part	Verified / Unknown (distances)
Northridge	Local Route 107 runs along Hanover Ave (timetable effective June 15, 2026); Routes 324 and school-year 441 also use Hanover Ave. Stop positions relative to the site and the nearest EBS stop are Unknown	D&L segments near Kimmett's Lock (Allentown) and Hanover Canal Park were planned to open in 2026 (Verified as plans). Whether they opened, and whether the site can reach them, is Unknown	Verified / Unknown
Gracedale	Local Route 214 (Forks–Nazareth) lists Gracedale as a stop (May 2026); Flex Routes 502 and 506 also list it. No EBS line serves Nazareth	None found	Verified / Unknown (trail)
Bethlehem city parks	Several EBS stations in the city: Downtown Bethlehem, Bethlehem City Hall, Riverport, Southside Station, Hayes, Greenway, Casino, Stefko & Broad and Rose Garden. Distance from any one park Unknown	D&L Sand Island Trailhead (parking, restrooms); Saucon Park is two blocks from the South Bethlehem Greenway's new endpoint (Verified); Monocacy Way (Reported)	Verified
Wayne A. Grube Memorial Park	No LANta route or Flex zone found	Listed as a Nor-Bath Trail access point	Reported / Unknown (transit)
Louise W. Moore Park	No route found near it. The EBS Blue Line has "Bethlehem Twp." and "Butztown" stops; distance Unknown	On-site trails only; no regional link found	Unknown
Housenick / Johnston	Route 327 runs Bethlehem–Nazareth area; whether any route passes Christian Spring Road is unconfirmed	On-site streamside trail; no regional link found	Unknown
Tower Place	Local Routes 105 and 324 stop at Union at 8th. Nearest EBS station found: Rose Garden, on both the Green and Blue Lines. Distance not measured	None found	Verified / Unknown (distance)

Site	Nearest transit found	Regional trail	Label
Bethlehem Golf Club	No LANta route found	Monocacy Way's northern end is at Illick's Mill Park, on the same road as the club; distance Unknown	Reported
Former Steel lands east of SteelStacks	EBS stations Casino and Greenway are on the South Side. Distance from the site point Unknown	South Bethlehem Greenway; its final link to the Saucon Rail Trail was funded in July 2025, construction slated for 2026	Verified / Unknown (distance)
Palmer Park Mall	Local Route 106 and Flex Route 502 stop at the mall; not an EBS stop. Distance to an EBS stop Unknown	Palmer Township Recreation Trail (a loop of nearly 8 mi) is nearby; no direct link found	Verified (transit) / Reported (trail)
Westgate Mall	Local Routes 105 and 324 serve the mall. Nearest EBS station found: Rose Garden; distance Unknown	None found	Verified / Unknown

LANta's posted EBS hours may predate the June 2026 cuts (Section 3.5).

3.5 Transit, trails and "Bethlehem Connect"

- **Bethlehem Connect:** a separate project in our family of projects (transportation). It is not an official, studied or funded line, and no public program uses that name. The closest official item is "**BethConnects: A Trail Study**" (City of Bethlehem, 2015–2016, prepared with URDC, funded by DCED GTRP and CDBG), a completed study rather than a construction program. A Lehigh River pedestrian/bike bridge idea was studied in 2021 (≈\$35M–\$85M, Oct 2022 estimate). LVTS listed it as an "unmet need" in Oct 2023.
- **LANta EBS (operating):**
 - Green Line: South Bethlehem – Allentown – Whitehall, 14.1 mi.
 - Blue Line: Trexlertown – Bethlehem – Easton, 26.8 mi.
 - Every 15 minutes or better between Allentown and Bethlehem.
 - Fares since Mar 23, 2026: \$2.50 single, \$5 day pass. Seniors 65+ ride free with a PennDOT Senior ID; children 5 and under free with an adult.
- **LANta service trend:** ≈5% cut in Jan 2026, ≈7% in Jun 2026, and more cuts expected Jan 2027. Do **not** assume new routes.
- **Passenger rail (Checked):** a PennDOT-commissioned Phase I study (March 27, 2024) named five likely corridors (two to New York, two to Philadelphia, one to Reading), capital costs of roughly \$450M–\$739M, and a 10–12-year process. Lehigh Valley was not among the FRA Corridor ID initial selections. The LVPC secured \$400,000 for a Phase II study in December 2025, expected to take 12–16 months. **No passenger service is funded or scheduled.**
- **Trails (Checked unless noted):**
 - **South Bethlehem Greenway:** ≈1.9 mi today. Its final phase was fully funded on July 23, 2025: \$500k DCNR, \$500k LVTS Transportation Alternatives, \$300k Northampton County. Construction was slated for 2026; whether it started is unknown.
 - **Greenway–Saucon link:** the city bought 11.8 acres of former Norfolk Southern right-of-way for \$4.3M (2024) to close a ≈1.2-mile gap to the **Saucon Rail Trail** (≈7.5 mi, Hellertown to Coopersburg).
 - **D&L Trail / Lehigh Canal towpath:** runs Allentown–Bethlehem (≈3.9 mi per the D&L's own trail-section page, Checked) and Bethlehem–Easton. The Lehigh Valley gap north of Allentown is expected to close around 2036.
 - **Other trails:** Monocacy Way (≈2.5 mi, Checked: TrailLink and Historic Bethlehem's Heritage Trail guide); Nor-Bath Trail ≈5.9 mi.
 - **Bethlehem Township** began an Active Transportation Plan in 2023, paid for by a state WalkWorks grant (Checked). Whether it was adopted is Unknown.
- **Planning stance:** prefer sites within ¼–½ mile of an EBS stop or a regional trail. No candidate has a sourced distance to an EBS stop yet (access table in Section 3.4). A "transit stop reserve" appears on Plan C only as a placeholder. No route, service or station is assumed.

3.6 Recommended next inquiries (in order)

Status (Oct 19, 2026): the main location is being finalized, and no landowner has confirmed a site in writing. Nothing has been agreed in writing with the City or with any landowner or agency. The steps below are the order the research recommends.

- 1. A regional question first: the Lehigh Valley Planning Commission (LVPC), the regional planning agency.** A first feasibility question is **prepared and on hold while the main location is being finalized** (docs/DECISIONS.md #40). It asks what in FutureLV (the regional plan) and Livable Landscapes (the counties' open-space plans, prepared with LVPC) should guide whether, and where, a small pilot would make sense. It names no site and asks no landowner for anything. Expect a referral, not an endorsement.
- 2. Then whichever office LVPC points to,** for example a host municipality or a county parks office.
- 3. Only after that, site questions,** still asking rather than assuming:
 - **Northridge:** ask the developer and Allentown planners how the required at least 70 acres of recreation open space will be designed, owned and maintained.
 - **Gracedale:** submit public comment asking that the campus plan reserve a public green or family park area.
 - **City of Bethlehem Parks & Recreation:** offer pop-up "Discovery Days" and a pilot aligned with the "40 in 10" plan, outside floodways.
 - **Wind Creek and Palmer Park Mall:** low-priority questions about any indoor or four-season partnership.
- 4. Gall Farm Preserve: reference only.** The county already has its own plans for the land, so this brief does not ask for it. Learn from the county's project instead (its Phase I plans, grants and trail link) from public records.

4. Nearby attractions and the market gap

Attraction	Distance (approx.)	Price / model (2026 unless noted)	Note
Dorney Park & Wildwater Kingdom	20–25 min	Season pass \$145 at gate; day ≈\$60+	Six Flags; not on the Mar 2026 seven-park sale list; parent under financial pressure (Oct 2026) (Verified/Reported)
Knoebels	≈1 h 40 min	Free entry & parking; tickets from \$5 (≈2 rides); wristband \$40/\$60	≈150 ac; 100th season (Reported/Verified)
Bushkill Park	20–25 min	Small-scale weekend operation	≈10–12 antique rides incl. 1928 carousel; floods (Reported)
Land of Make Believe (NJ)	≈40 min	One price incl. rides and water park	≈30 ac (Reported, low confidence)
Crayola Experience (Easton)	≈20 min	From \$29.99	Indoor (Verified)
Da Vinci Science Center (Allentown)	≈15 min	From \$20 (2024)	67,000 sq ft, ≈\$80M, opened May 2024 (Reported)
Lehigh Valley Zoo	≈30 min	—	29 ac in 1,100-ac preserve (Reported). Children's activity area (≈\$10M, four phases): first phase open, full opening expected summer 2027 (Checked). Visitor count not confirmed (Unknown)
Weona Park Carousel (Pen Argyl)	≈30 min	\$2 per ride , cash	Borough-owned Dentzel carousel c.1900 (Verified)
National Canal Museum	≈20 min	\$8/\$7/\$6	No canal-boat rides in 2026 (Verified)
Indoor play (Sky Zone, Urban Air, BounceU)	10–25 min	Per session	Trampoline-focused

Attraction	Distance (approx.)	Price / model (2026 unless noted)	Note
Musikfest / SteelStacks	Bethlehem	Free and ticketed	Musikfest 2026: 1,260,630 visits (Verified)

Public-park precedents for low-cost rides:

Park	Operator	Ride price	Published cost
Broome County, NY carousels (6)	Public	Free (donor condition)	Historic gifts
Wheaton Regional Park, MD	Montgomery Parks	\$4 (new 36-ft carousel, Apr 2025)	—
Watkins Regional Park, MD	Prince George's Parks	\$3.50 resident / \$3.75 non-resident	—
Ovid Hazen Wells Park, MD	Montgomery Parks	—	≈\$10M whole-park project reopened May 2026
Riverfront Park, Spokane	City	\$3.75	≈\$7M glass rotunda (≈12,000 sq ft)
Jane's Carousel, Brooklyn	Brooklyn Bridge Park	\$3	≈\$9M pavilion
Tilden Park, Berkeley	East Bay Regional Park District	\$4, or \$24 for 7 rides	—

Market gap.

- *Missing:* an everyday, walk-in, low-cost family park near Bethlehem, plus affordable rainy-day and winter play for children under 8.
- *Overlaps to respect:* the Lehigh Valley Zoo children's area, the heritage rides at Weona and Bushkill, and the indoor learning at Crayola and Da Vinci.
- *Complements:* the very large seasonal crowds at Musikfest and Christkindlmarkt (Christkindlmarkt visitor count not confirmed, Unknown), and Historic Bethlehem.

Aquariums. None within about an hour; no active Lehigh Valley aquarium proposal was found. An earlier ≈\$130M Easton plan was never built as described.

Who lives here (Checked unless noted):

	Lehigh County	Northampton County	City of Bethlehem
2020 Census	374,557	312,951	≈75,800 (2020 estimates base 75,792)
Latest estimate	384,383 (July 2025)	324,411 (July 2025)	not confirmed
Median household income (ACS 2020–24, 2024 dollars)	\$80,079	\$89,184 (122,624 households; Census QuickFacts, Checked in v1.1)	\$68,879 (31,052 households)
Persons in poverty	11.1% (vintage not stated)	8.8% (Census QuickFacts, Checked in v1.1)	not confirmed
Disability under 65	not confirmed	8.4%	not confirmed

- **Two-county population:** ≈708,600 (2024 estimates, LVEDC Aug 2025), up ≈21,000 since 2020 and driven by migration. Both counties ranked in Pennsylvania's top 10 for population growth.
- **Income gap:** Bethlehem's median household income is below Pennsylvania's (\$77,971) and the nation's (\$80,734). That is a reason to keep everyday access free. Northampton County's median (\$89,184) is above both (Census QuickFacts, Checked).

- **Tourism:** ≈16.6 million visitors in 2022, with ≈\$1.3 billion in visitor spending (Discover Lehigh Valley, Checked). No newer regional visitor count was found.
- **Not found:** age shares (under 18, 65+) could not be confirmed. Search extracts conflicted, so they are left out.

5. Three scales and realistic site-area allowances

5.1 Method

Rather than invent a guaranteed acreage, each scale was **test-fitted to scale on a sample rectangular parcel** (illustrative, not a site plan). The drawing then computes an area budget, which is compared with published reference sizes. The real need depends on the site's shape, slopes, floodplain, buffers, parking strategy and the program chosen.

	A • Small Public Discovery Park	B • Family Attraction Park	C • Larger Regional Park
Planning range	≈5–15 ac	≈20–35 ac	≈50–120 ac
Test fit	830 × 525 ft = 10.0 ac	1,250 × 975 ft = 28.0 ac	2,000 × 1,630 ft = 74.8 ac
Play & discovery	0.94 ac (9%)	1.79 ac (6%)	within B core
Rides & attractions	—	2.35 ac (8%)	+1.54 ac
Nature, gardens, water	2.91 ac (29%)	6.99 ac (25%)	+25.2 ac
Plazas, lawn, gathering	1.74 ac (17%)	3.42 ac (12%)	+2.0 ac
Buildings (footprint)	0.11 ac	0.48 ac	+0.61 ac
Parking & arrival	0.78 ac (≈100 spaces)	4.16 ac (≈360 paved + ≈190 grass)	+8.0 ac festival/overflow meadow
Operations	0.18 ac	0.53 ac	+1.1 ac
Paths, buffers, stormwater margins	3.35 ac (34%)	8.25 ac (29%)	+8.1 ac
Lower end possible if...	it is attached to an existing park and shares parking	parking is shared or shuttle-served, with a compact ride area	the site already contains protected woods or wetlands
Upper end needed if...	the site has steep slopes, a stream or irregular shape	it needs on-site event parking, wide neighbor buffers or a train loop	it adds amphitheater events and a four-season hall

Reference sizes found (scale check, not targets):

Place	Size	Label
Lehigh Valley Zoo	29 ac	Reported
Land of Make Believe	≈30 ac	Reported, low confidence
Hersheypark	121 ac (as of about 2015)	Reported
Knoebels	≈150 ac	Reported
Northridge required open space	at least 70 ac	Checked

5.2 Key planning assumptions (Assumption)

- **Parking:** ≈330 sq ft per space including aisles (≈130 spaces per acre). Every 100 spaces is about ¾ acre, and parking is the single biggest swing factor.
- **Scale B design day:** 3,000–5,000 guests, with ≈60% in the park at once. Assumed for sizing only; a market study must set it.
- **Lawn events:** 15–25 sq ft per person seated on blankets. Event permits set the actual limits.
- **Playground spacing:** CPSC and ASTM F1487 use zones (6 ft minimum, larger around swings).

- **Buffers:** 25–100 ft of planted buffer to neighbors. Stormwater and landscape margins are 15–35% of a site.
- **Fire Lanes:** 20 ft minimum width and 13 ft 6 in clearance (International Fire Code §503, where locally adopted).

6. Program

Element	Scale	Notes
Inclusive playgrounds for 0–2, 2–5 and 5–12, plus a calm/sensory nook, with a discovery and nature theme (logs, boulders, water and fossil-dig play)	A	Ground-level variety; accessible surfacing; CPSC handbook and ASTM F1487 (Section 7.2), accessible play under the 2010 ADA Standards, certified (CPSI) inspection, and the landowner's written permission
Native meadow, pollinator and learning gardens, rain gardens	A	DCNR, <i>Landscaping with Native Plants</i> ; Penn State Sea Grant, <i>Choose Native</i> (2024); Penn State Extension native meadow guidance (Checked). Protect existing native plants first; weed out invasives
Fruit and vegetable gardens , with harvests shared through the food and water hub; pets welcome on leash on paths and lawns where it's safe (not in playgrounds, the splash pad or the food hub; service animals always welcome); a bus stop at the main entrance	A	Owner direction, Oct 20, 2026 (docs/DECISIONS.md #42). The bus stop needs the transit agency's agreement (LANta, or Bethlehem Connect if it happens); none has been asked. Pet and food rules to check with the host municipality and health officials (Assumption)
Walking loop, mown nature trails, boardwalks	A	≈1,400 ft accessible loop + ≈750 ft trail (A); ≈2,700 + ≈1,400 ft (B)
Outdoor fitness stations along the walking loop: a few simple stations for teens, adults and seniors, at least one usable from a wheelchair, each on the accessible route with shade and a bench nearby (owner direction, relayed by Project OS, Oct 21, 2026; docs/DECISIONS.md #50)	A	Equipment for unsupervised public use follows ASTM F3101, written for people 13 and older (Checked: ASTM's product page for F3101-21a); younger children use the playgrounds. Surfacing, spacing and the number of stations: to check with the maker and the standard (Assumption)
Garden or hedge maze with paths wide enough for wheelchairs and strollers, and plants low enough that adults can see children (owner direction, relayed by Project OS, Oct 22, 2026; docs/DECISIONS.md #54)	B	Planning-phase idea. Hedges take years to grow, so a seasonal maze of tall grasses or flowers could come first (Assumption)
Dog agility course or maze for animals, reuse first: added to an existing off-leash area nearby before any new one (docs/DECISIONS.md #37, #54)	B	Kept apart from play and food areas (Assumption)
Giant destination playground: a large, inclusive playground for all ages as a regional draw, a later phase only if justified (docs/DECISIONS.md #54)	C	Only if Gate 3 is met. Same standards as every playground: CPSC handbook and ASTM F1487 (Section 7.2), accessible play under the 2010 ADA Standards, accessible routes, shade, restrooms and water nearby (Assumption)
Picnic groves and shade pavilions; shaded lounges and quiet areas	A	Quiet zones away from rides and stage
Great Lawn and small bandshell for music, films and seasonal events	A	Stage oriented away from neighbors
Welcome Hub: modern, accessible restrooms with all-gender and family rooms, adult changing rooms, first aid, information, free drinking water and bottle refill	A	Refill stations at every restroom and plaza. Built only on ground outside the floodway
Food and water hub in the Welcome Hub: shared fridges and freezers so food left over from events and programs is saved, not wasted; water refill; a named food-safety lead (food-handler certified)	A	Every event plans its food and water ahead. A store, farm or food bank is named as a partner only after it agrees in writing. Food-safety rules: Bethlehem Health Bureau inside the city (Section 6 food row); details to check (Assumption; docs/DECISIONS.md #39)
Splash pad (optional, seasonal)	A/B	Flow-through vs recirculating with UV (CDC MAHC); PA DOH public bathing place permit required, \$10 per unit (Checked, Section 7.2)
Carousel (new 36-ft class, or a restored historic machine)	B	Indoor or covered pavilion; accessible chariot
Appropriate family rides: small family coaster, spinning ride, swing ride, kiddie cluster	B	4–6 rides, low height, low noise

Element	Scale	Notes
Family observation attraction: Lookout Hill (earth mound with ≤5% spiral ramp) as the default; small observation wheel optional	B	The hill is fully accessible and needs no ride registration
Miniature train loop	B	≈1,600 ft in test fit
Discovery Barn: interactive science and local history (Lehigh River, Moravian heritage, steel and industry)	B	Partnerships with local museums are possible, but none has been contacted
Farm-animal corner at the Discovery Barn (optional): visits by a partner farm or youth farm club on program days, never kept on site without full-time care	B	Owner's "think big, build modern and natural" principle (Oct 19, 2026; docs/DECISIONS.md #37). Animal welfare, animal-contact health rules (hand-washing stations, supervision) and any permits: Unknown, to check. No partner farm or club has been asked. No new dog park: the City already runs an off-leash dog area at Monocacy Park (Reported), so reuse first (Gate 1)
Themed discovery play	B	In the Scale B test fit. The theme is open: children and families would help choose it (Assumption)
Small Ocean Discovery corner: fish and invertebrates, touch tank	B/C	≈800–2,000 sq ft incl. life-support room. Could be run with the separate Ocean Discovery Center project if both sides want it. A full aquarium belongs to that separate project (water volumes, structural loads, life-support buildings, 24/7 specialist staff, large capital and operating budgets)
Food pavilion: affordable menu with ingredient and allergen transparency (nine major allergens incl. sesame)	B	Inside Bethlehem: Bethlehem Health Bureau. Elsewhere: PA Department of Agriculture, unless the host municipality runs its own health department (Checked); check for the chosen site
Reusable-equipment library (wagons, strollers, sun hats, sensory kits) and a small, affordable merchandise shop	A/B	Durable, local, low-markup items
Community garden, greenhouse and volunteer hub; youth programs	A/B	Volunteers add to paid staff and never replace safety roles. Program types below
First aid, security, emergency routes, assembly areas, weather shelters	All	See the Plan 08 overlay and the security approach below
Four-season Discovery Hall, amphitheater, festival meadow	C	Only if justified
Possible future Bethlehem Connect stop	C reserve	Placeholder only. Bethlehem Connect is a separate project; no route or service is assumed

Youth programs (Assumption, to test). No school, club or employer has been contacted.

- **Junior naturalists** (children with families or school groups): meadow and creek walks, bird counts and garden care, logged as discoveries (Section 11).
- **Teen ambassadors** (volunteer roles teens choose): greeting, wayfinding, survey help, translation and accessibility testing, with real credits.
- **Paid jobs for teens 16 and older:** guest services, grounds, food service, and ride operator after the ride maker's and ASTM F770 training, supervised days and sign-off. Pennsylvania's hours limits for ages 16–17 apply (Section 7.2).
- **Non-ride roles for ages 14–15:** for example garden, guest services and program helpers, within federal hours rules (29 CFR 570.35) and Pennsylvania's own child labor rules. Teens under 16 never operate rides (the state minimum operator age is 16), and they may not tend most rides, or help riders get on and off (Checked, Section 7.2).

Security approach (Assumption, to test).

- A **staffed guest services point** at the Welcome Hub whenever the park is open, with staff who know the site and the emergency plan.
- **Lighting and closing hours:** shielded lighting on main paths and at the entry (Section 9); posted closing hours; buildings and rides locked after hours.

- **First aid:** a first aid station and staff trained in first aid at every opening, with AEDs (automated external defibrillators) placed where they are easy to reach.
- **Lost-child plan:** one meeting point at guest services, a written reunification procedure, and staff trained to follow it.
- **Privacy:** no facial recognition. Cameras, if any, only where needed, with posted notice.

7. Ride safety and operations

Summaries below are for planning. **Final requirements must be confirmed by the PA Department of Agriculture, a PA-licensed engineer, an insurance broker and legal counsel.** No ride or structural engineering is offered here.

7.1 Pennsylvania ride regulation (Verified/Reported from official and regulation-mirror extracts)

Topic	Requirement
Law and rules	Amusement Ride Inspection Act (4 P.S. §401 et seq., 1984); 7 Pa. Code Ch. 139 (registration and inspection; design; operation, maintenance and records). Last full rewrite Dec 2008 (added inflatables, climbing walls).
Agency	PA Department of Agriculture, Bureau of Ride & Measurement Standards; public lookup at RideSafe.pa.gov
Registration	Every ride registered each calendar year before operating; registration plate free, replacement \$30
New ride types	Department approval; sealed statement from a PA-licensed professional engineer that the ride meets the Act, Ch. 139 and ASTM F24
Inspections	Owner-hired, Department-certified Qualified Inspector affidavit before opening, then every 30 days or each new setup; permanent parks file a yearly itinerary plus monthly affidavits within 48 hours
Records	Daily inspection checklists kept on site 3 years; maintenance and testing history file per ride
Incidents	Death or serious injury/illness reported within 48 hours on the Department form
Operators	Minimum age 16; one ride per operator; no alcohol or drugs; staffing at least the manufacturer's or ASTM F24 recommendation, whichever is higher
Insurance floors (\$139.5)	Class I (kiddie rides, miniature trains, inflatables): \$100k per occurrence / \$300k aggregate. Class II: \$250k / \$500k. These 1980s-era floors are far below what a broker will recommend. Carousel class to confirm.
Standards	ASTM F24 family adopted by reference: F770-26 (operations, maintenance, inspection), F1193-26 (quality and manufacture), F2291-26a (design), F2137 (acceleration measurement); F1159 withdrawn 2025. The edition in force when a ride was first sold governs, which matters for a historic carousel.

7.2 Other rules (round 2 status shown)

- **ADA 2010 Standards** (reported from reproductions of the standard; confirm against the official Access Board/DOJ text):
 - **Rides, §234.3:** each new ride must provide at least one wheelchair space, transfer seat or transfer device.
 - **Ride exceptions:** rider-operated rides, rides designed primarily for children where an adult helps them on and off, and rides without seats. Exempt children's rides still need an accessible route to the load and unload areas.
 - **Play areas, §240:** at least one of each type of ground-level play component on an accessible route.
 - **Elevated play components:** at least 50% on an accessible route (Checked). With 20 or more elevated components, at least 25% must be reached by ramp.
 - **Route widths in play areas:** generally 60 in.
 - **Mobility devices:** 28 CFR 36.311.
- **Playgrounds:**

- CPSC published its updated **2025 Public Playground Safety Handbook** on Aug 13, 2025. It is guidance, not a rule (Checked).
- Current equipment standard is **ASTM F1487-25** (Checked).
- Also apply F1292 (surfacing), F2373 (ages 6–23 months) and F1951 (accessible surfacing), plus NRPA CPSI inspections.
- **Splash pads:**
 - The **PA Department of Health requires a public bathing place permit for spray pools and pads**, at \$10 per unit (Checked).
 - 28 Pa. Code Ch. 18 (§18.11) requires a Department of Health permit before a public bathing place is built or operated (Checked).
 - CDC's Model Aquatic Health Code recommends secondary disinfection for recirculating spray features.
- **Food:**
 - Pennsylvania adopts the current FDA Food Code under 7 Pa. Code Ch. 46. The 2022 changes applied from March 2023, and sesame became the ninth major allergen on Jan 1, 2023 (Checked).
 - The Food Code requires written notice of major allergens in unpackaged food.
 - Inside Bethlehem, the Health Bureau licenses food service (Checked).
- **Teen workers:**
 - US Labor Department Fact Sheet #37: **14–15-year-olds may not operate or tend most amusement rides** (Checked in v1.1: a second DOL fact sheet says youth under 16 may not help riders get on, ride or get off amusement or water-park rides). Federal hours limits apply: 3 h per school day, 18 h per school week, 7 am–7 pm (9 pm in summer) (29 CFR 570.35; not re-checked in v1.1).
 - Pennsylvania, ages 16–17 (Checked): school weeks max 28 h and 8 h a day, between 6 am and midnight; vacations max 10 h a day and 48 h a week.
 - Ride operators must be 16+ under Ch. 139.
- **Weather and emergencies:**
 - Lightning: close rides and water features at the first thunder and stay in a substantial building at least 30 minutes after the last thunder. NWS says picnic shelters, tents, sheds and partly enclosed areas are not safe; the best shelter is a fully enclosed building with wiring and plumbing (Checked in v1.1: NWS outdoor-venue toolkit and safety pages). Closing at the first thunder is our rule, consistent with NWS guidance (Assumption).
 - Wind: limits per each manufacturer's manual.
 - Heat: illness plan for staff.
 - Emergency action plan per OSHA 29 CFR 1910.38.
 - Stages and tents: Uniform Construction Code permits; trained crowd managers for large events where the fire code is adopted.

7.3 Operations model (Assumption, to test)

- **Season:**
 - Rides: weekends in May and September, daily from June to August; the carousel could run longer if enclosed.
 - Grounds, gardens and playgrounds: year-round.
 - Winter: lights and indoor programs only.
- **Staffing for Scale B:**
 - At least one trained operator per ride at all times, plus attendants as the manufacturer requires.
 - A ride-maintenance lead with certified inspector access.
 - Guest services, first aid, grounds and education staff.

- **Maintenance:** daily pre-opening checks and logs; off-season overhauls; spare-parts budget; manufacturer service bulletins tracked.
- **Capacity:** illustrative hourly capacities are in visual 09. Real capacity comes from manufacturers and observed loading.
- **Noise:**
 - Choose low-noise rides; orient the stage away from homes.
 - Use earth berms and planted buffers.
 - Set an evening curfew and property-line sound limits; comply with the local noise ordinance (text not yet retrieved).
- **Weather closures:** posted policy, lightning detection, free re-admission or ride credit when closed.

8. Accessibility and inclusion

- Every attraction, restroom, food area and viewing spot sits on an accessible route: firm, stable, slip-resistant, with a target $\leq 5\%$ running slope and $\leq 2\%$ cross slope.
- Companion seating, shade and rest benches about every 200–300 ft. Adult changing table and family restrooms.
- Sensory-friendly design and operations:
 - quiet rooms and calm zones;
 - sensory maps;
 - loaner headphones;
 - sensory-friendly hours;
 - IBCCES-style staff training (a certification option, not an endorsement).
- Multilingual signage (English and Spanish at minimum), plain language, pictograms; large-print and audio guides.
- Accessible parking and drop-off nearest the entry. Accessible car on the train; accessible carousel chariot.

9. Sustainability

Measure	Approach
Energy sources	Only natural energy (owner direction, relayed by Project OS, Oct 21, 2026; docs/DECISIONS.md #49): solar, wind, hydro only where permitted (with fish passage and the required reviews), geothermal, and heat recovery. On the park: efficient lighting first, then solar and batteries (rows below); ground-source (geothermal) heat pumps for the buildings, and heat recovery, for example from the food hub's fridges and freezers, only where a site study shows they fit. Wind turbines, hydro and pumped storage belong at regional sites, not in the park, and any stream on the site stays protected. Supply: more natural power could come through the Energy & Logistics Hubs, a separate planned project that repeats region by region; the park does not depend on it. Power crosses the grid only under the electric utility's and the state's rules. Whether any of this fits a real site: Unknown (Assumption: aims, not findings)
Lighting	LED, fully shielded, warm color, curfew dimming (DarkSky International guidance)
Solar	Carport or roof arrays sized under 1 MW. Federal credit status (Reported): under the July 2025 federal budget law, solar must be in service by Dec 31, 2027 (the July 4, 2026 begin-construction path has passed). Elective (direct) pay remains for nonprofits and governments; arrays under 1 MW are exempt from the new domestic-content penalty on direct pay. Connecting (v1.1): the utility is PPL or Met-Ed (FirstEnergy Pennsylvania), depending on the site. On PPL, an array under 1 MW would usually be a Level 2 interconnection (\$250 plus \$1 per kW application fee; study and upgrade costs not published) (Checked, Section 3.4).
Storage	Grid-connected batteries for peak shaving and resilience; thermal storage (heat or cold kept in water tanks) where a building needs it; pumped storage only at regional sites where the land allows (owner direction, Oct 21, 2026; docs/DECISIONS.md #49); storage credit continues for construction starting through 2033, then phases down (Reported)
Net metering	PA allows non-residential systems up to 3 MW; monthly excess credited at retail, annual excess at price-to-compare. PPL's own net-metering pages confirm this for its territory, with a cap of 110% of the account's yearly use (Checked in v1.1, Section 3.4). Met-Ed (FirstEnergy Pennsylvania) terms not yet researched

Measure	Approach
Water	Native, drought-tolerant planting; no irrigated turf except lawns; rain gardens and stormwater wetland per PA DEP BMP Manual; refill stations instead of bottled water
Waste	Sorting points (recycling, compost, trash) at every entrance, the Welcome Hub and every event; food and garden waste composted for the gardens, on site or with a partner (to identify); reusable dishware and deposit cups at the food pavilion; no single-use plastic sales
Reuse when building	Keep existing paths, trees, soil and sound structures where they work; salvage and reuse materials taken out; new materials natural, local or reused wherever practical (owner direction, Oct 20, 2026; docs/DECISIONS.md #46)
What it protects	Native plants and pollinators, mature trees, the creek and its banks (riparian buffers, no building in the floodway), and clean water through rain gardens and less paving (Assumption: aims, not findings)
Materials	Durable, repairable, locally sourced; maintenance-friendly ride and play choices; life-cycle cost in every purchase
Local alignment	Bethlehem's Climate Action Plan (2021) targets –60% community emissions by 2030 and net-zero by 2040 against 2017 (Checked). A park on city land should be all-electric, solar-ready and low-water

10. Kindness first: paying for it honestly

10.0 The stance

Owner direction (Oct 18, 2026): **things will be done out of kindness.** Money should never be the reason someone sits out. Project OS states the honest counterpart: *something is only free if someone reliably pays for it or gives it*, so a project names its donor or funding source before promising anything free. Every donated critical item also has a backup (borrow, rent or buy), so a late gift can't stall the project.

The long-term aim (owner direction, relayed by Project OS, Oct 20, 2026; docs/DECISIONS.md #47): a future where money matters much less, and what counts is people and the work they do together; it is an aim, not a promise, and for now money is a tool.

- **Free is the goal, including rides.** Free rides are proven: Broome County, New York has run six historic carousels free for about a century under a donor's condition (Section 4). A Bethlehem version would need a donor, a public partner or an endowment that reliably covers the costs below.
- **Kindness covers a lot.** Volunteers in roles they choose, donated plants, materials and equipment, local food partners, free events and programs.
- **Some costs remain whatever happens,** and need a named giver or payer:
 - ride insurance (state floors \$100k–\$250k per occurrence, real policies far higher);
 - state ride registration and monthly Qualified Inspector affidavits;
 - manufacturer parts and maintenance;
 - water, sewer and electricity;
 - trained, reliable ride operators aged 16+ for every operating hour.
- **If no giver covers rides yet,** keep them as low as possible: about \$2–\$4 a ride, the range other public carousels charge (Section 4), with free-ride days. Rides become free whenever someone reliably gives or pays for them. Say plainly why, and what would make them free.

10.1 Principles

1. **Core operating costs come from reliable recurring revenue.** That covers staff, maintenance, insurance, safety and utilities, paid by earned income plus committed public support.
2. **Donations and volunteers are welcome everywhere, with a backup for anything critical.** A donor can make rides free or fund a whole season. Core safety (inspections, insurance, trained operators) still never depends on a gift arriving on time.

3. **Capital grants build; reserves sustain.** Fund an operating reserve and a maintenance and replacement fund before opening each phase.
4. **No income tests.** Money is a tool, never the gate. The park would not sort or label people by income: everyone gets the same free access and the same prices whatever their income, and nobody has to show proof of income or benefits. Discounts go by age or caregiving only; free-ride days and community ride passes are open to everyone (decided Oct 19, 2026; docs/DECISIONS.md #28).

10.2 Who could pay or give (to test, not a forecast)

- **Earned:**
 - ride tickets and ride bundles;
 - food and drink;
 - pavilion, party and room rentals;
 - camps and programs;
 - event fees;
 - small shop;
 - optional paid parking on peak event days only.
- **Public:** park maintenance support if publicly owned; capital grants.
- **Contributed:**
 - memberships and ride passes;
 - annual giving;
 - program sponsorships with no naming of public spaces after products;
 - a long-term endowment.

If rides can't be free yet (arithmetic example, not a forecast): 300,000 visits × 1.2 rides per visit × \$3 ≈ **\$1.08M per year**. That is also roughly what a donor would need to give each year to make those rides free. Each \$0.50 of price ≈ ±\$180k; each 0.1 rides per visit ≈ ±\$90k. A market study must provide real inputs.

Benchmarks that set expectations (Checked):

Benchmark	Finding
NRPA 2026 Agency Performance Review (medians)	\$111.73 operating spending per resident; \$9,470 per acre managed; revenue covers 26% of operating costs ; 9.2 full-time-equivalent staff per 10,000 residents
NRPA 2025	\$103.13 per resident; 27.2% cost recovery
Griffith Park miniature train, Los Angeles (2025)	≈285,000 riders a year; fares proposed to rise from \$4 to \$5 because of propane, materials, salary and insurance costs
Spokane Looft Carousel	\$3.75 a ride or \$9.95 for an unlimited day pass
Wheaton Carousel, MD (opened Apr 2025)	36-ft machine with one accessible chariot; \$4 a ride
Museums for All (studied, not adopted)	Run by the Association of Children's Museums with IMLS; SNAP/EBT cardholders pay free to \$5 at 1,600+ museums. Studied as a discount model and not adopted: it requires showing a benefits card, and this park uses no income tests (Section 10.1, principle 4)

What this means: a typical public park system earns about a quarter of its operating costs. A park whose plan depends on rides paying most of the bills must prove it with a market study and the pilot's real numbers. That is why Gate 2 exists.

10.3 Affordability tools

- Free entry to grounds, playgrounds, gardens, water and restrooms every day.

- Rides free whenever someone reliably gives or pays for them; otherwise as low as possible: about **\$2–\$4** a ride, the range other public carousels charge (Section 4), with free-ride days. Bundles and an annual family ride pass.
- Free-ride days for everyone; senior and caregiver discounts; community ride passes handed out through libraries and schools, with no proof of income or benefits required (Section 10.1, principle 4).
- Free water; low-price basic food items; bring-your-own picnic welcome.

10.4 Capital funding sources (Verified/Reported, Oct 2026)

Program	Who applies	Key terms
DCNR C2P2 (Keystone-funded)	Municipalities, counties, 501(c)(3)s (varies by category)	Mostly 50% match; 2026 round Jan 12 – Apr 30; local awards ≈\$250k–\$500k
DCED/CFA Greenways, Trails & Recreation (GTRP)	Municipalities, nonprofits, others	Up to \$250k; 15% match; 2026 window Feb 1 – May 31
RACP	Redevelopment or industrial development authorities, local governments	Project ≥\$1M; ≥50% non-state match; must be itemized in a Capital Budget Act
Local Share Account, Northampton/Lehigh (Wind Creek)	Counties, municipalities, authorities (nonprofits via sponsor)	Window Jul 1 – Sep 30; recent awards ≈\$90k–\$570k
Northampton County Livable Landscapes	Municipalities (nonprofit eligibility unknown)	Dollar-for-dollar match; June 2025 awards \$600k total
Lehigh County Tourism Development Grant	501(c)(3)s and public bodies, Lehigh County sites only	3:1 match; capital only
LWCF / ORLP (federal, via DCNR)	Public agencies	LWCF 1:1 match (≈\$250k–\$2M); ORLP for urban areas over 25,000, Nov 1 deadline
EPA Brownfields; PA Industrial Sites Reuse Program	Varies	Only if a former industrial site is chosen
Neighborhood Assistance Program tax credits	Nonprofits	Businesses get 65–95% PA tax credit for contributions

10.5 Operating budget structure (placeholder, Assumption)

There is no operating budget yet. This section lists what one would have to cover and who could pay for each part, so that professionals can estimate it before Gate 1. It adds no new dollar figures: the only numbers are ones already sourced in this brief. Everything else is **to be estimated by professionals**.

Cost category	Scale A (small park)	Scale B adds	Scale C adds	Who could pay
Staff	Paid core staff for grounds, maintenance, guest services, first aid and programs. Volunteers add to them and never replace them	Trained, paid ride operators aged 16+ for every operating ride hour (at least one per ride, plus attendants the manufacturer requires); a ride-maintenance lead; food service or a concession	Staff for the four-season hall, amphitheater events and the nature preserve	Park income and a public partner budget
Insurance	General liability and property	Ride liability well above the state floors (\$100k–\$250k per occurrence); a broker sets real limits	Cover for larger events	Park income and a public partner budget; never a gift alone
Inspections and registration	Playground safety inspections (NRPA CPSI); splash pad permit if one is built (\$10 per unit)	Yearly state ride registration; Qualified Inspector affidavits before opening and every 30 days; daily checklists and records	More rides, so more inspections	Park income and a public partner budget

Cost category	Scale A (small park)	Scale B adds	Scale C adds	Who could pay
Utilities	Water, sewer and electricity for restrooms, lighting and refill stations; more with a splash pad	Rides, food pavilion and Discovery Barn	Heating and cooling for the four-season hall	Park income and a public partner budget. Solar may lower electricity bills (Section 9), counted as upside only
Maintenance and replacement reserve	Play equipment, surfacing, paths, gardens, restrooms	Ride parts, manufacturer service, off-season overhauls	Buildings and larger grounds	Funded before each phase opens (Section 10.1, principle 3): capital grants build, reserves sustain
Programs	Nature and history programs, free events, sensory-friendly hours	Camps, school trips, Discovery Barn programs	Hall and amphitheater programs	Program fees where fair; gifts and program sponsorships for extras, each with a backup
Administration	Bookkeeping, payroll, nonprofit filings, charitable registration and any reviewed or audited statements required (Section 11), website	Ride pass and payment handling	A larger organization	Park income and a public partner budget

Who could pay, in plain terms:

- **Park income:** the earned sources in Section 10.2, such as rides when they can't be free yet, food, rentals, camps, event fees and the shop.
- **Public partner budget:** park maintenance support, if the land is publicly owned or a public partner takes part (Section 11).
- **Gifts:** only for extras, such as free-ride days, a donor who makes rides free, or a sponsored program. Every critical gift has a backup (borrow, rent or buy). Insurance, inspections and trained operators never depend on a gift arriving on time (Section 10.1).

Benchmarks already in this brief (Checked, Section 10.2):

- The NRPA 2026 median is that **revenue covers 26% of operating costs**. If this park did as well as a typical public park system, about three-quarters of its operating budget would still need a public partner or other reliable recurring support. A plan in which rides pay most of the bills has to prove it (Gate 2).
- NRPA's median of \$9,470 per acre managed describes ordinary public parkland across whole park systems. It leaves out rides, ride operators, ride insurance and inspections, so it cannot size this park's budget. This park's operating cost is to be estimated by professionals.

What must be known before Gate 1 ("credible operating budget", Section 12):

1. A professional operating cost estimate for Scale A, and an outline for Scale B: a staffing plan by season and hour, utilities for the actual site, a maintenance schedule, and inspection and registration costs.
2. A first indication from an insurance broker. Formal quotes are a Gate 2 condition.
3. Whether a public partner would take part, and which costs it would carry, in writing.
4. Market study inputs for park income: visits, rides per visit and spending (Section 10.2).
5. A clear split between core costs and extras, with a reliable payer for every core cost and a backup for every critical gift.
6. Target sizes for the operating reserve and the maintenance and replacement fund, set by professionals.

10.6 Community benefits (aims, not promises)

Planning sheet 10 lists the benefits below. They are aims for a future park and its future nonprofit, not promises: none is funded or adopted, and each depends on the money rules above.

Benefit	What we would aim for	Label and basis
Free every day	Grounds, playgrounds, gardens, paths, water refill and restrooms, free every day	Aim (Assumption). Needs reliable recurring money for core costs (Section 10.1)
Free or low-cost rides	Free whenever someone reliably gives or pays for them, as Broome County, NY has done with six carousels for about a century. Otherwise as low as possible: about \$2–\$4 a ride, the range other public carousels charge, with free-ride days	Aim (Assumption). Precedents and prices in Section 4
Free days and discounts	Scheduled free-ride days for everyone; senior and caregiver discounts; sensory-friendly hours	Aim (Assumption). No income tests: nobody has to show proof of income or benefits (Section 10.1, principle 4). Museums for All was studied and not adopted, because it requires showing a benefits card (Section 10.2)
Roles you choose	Switch roles anytime; most need no training. Trained roles are never self-signed: first aid, food handler (food-safety certification), maintenance lead, and ride operator, a paid job for people 16 and older that needs the ride maker's and ASTM F770 training, supervised days and sign-off. Real credits; hours never ranked	Aim (Assumption), from the shared roles kit (Section 11). The operator minimum age of 16 is a state rule (Verified, Section 7.1)
Learning	School field trips, nature and local-history programs, citizen science	Aim (Assumption). No school or museum has been contacted
Health and environment	Shade, cooling and places to be active; native habitat and stormwater gardens	Aim (Assumption). Planting guidance in Section 6 (Checked)
Local economy	Local food vendors with clear ingredient and allergen labels; a small, affordable shop	Aim (Assumption). No vendor has been contacted. Written allergen notice for unpackaged food is a Food Code requirement (Checked, Section 7.2)
Open books	Publish budgets, a public safety summary each ride season, and accessibility audits every year	Aim (Assumption). Not required by law; the future nonprofit's board would have to adopt it. Reporting serious ride incidents to the state within 48 hours is required (Section 7.1); a public summary would be voluntary

11. Governance

Recommended model: a public–nonprofit partnership.

- **Public landowner or partner** (city, county or authority): owns or leases land, applies for RACP, LSA and LWCF, and may fund park maintenance.
- **A future independent nonprofit** (PA nonprofit corporation seeking IRS 501(c)(3) status; a fiscal sponsor in the meantime): raises funds, runs programs and publishes budgets.
- **Operations:**
 - paid staff for rides, maintenance, safety and education;
 - paid jobs for teens 16 and older, and non-ride roles for ages 14–15 within federal hours rules (Section 6, youth programs; Assumption);
 - staffed guest services, lighting and closing hours, first aid and a lost-child plan (Section 6, security approach; Assumption);
 - certified third-party inspectors;
 - food by concession or social enterprise.
- **Community advisory council:** youth, seniors, disability advocates, neighbors, schools.

Nothing has been agreed in writing with the City or with any organization, landowner or agency named in this brief. The website will carry no partner logos.

Roles and recognition (the shared kit used across our projects):

- **Roles people choose, like picking a position in a game**, and switch whenever they like. Volunteer shifts last 2 hours at most, outdoors where possible (owner direction, Oct 20, 2026).
 - *Quick-entry, no training*: garden helper, storyteller and local-history researcher, photographer, survey and feedback helper, event greeter, cleanup crew, translator, accessibility tester.
 - *Trained roles*: ride operator (16+, manufacturer and ASTM F770 training, supervised days, sign-off), first aid, maintenance lead, food handler (food-safety certification). Nobody signs themselves off.
- **Build roles and long-term roles** (owner direction, Oct 19, 2026; Assumption; docs/DECISIONS.md #35):
 - *Build roles* are many and temporary, and each has an end point: design and engineering (licensed professionals, until permits are issued), construction support and community build days (until the build is done), setup and installation, training (until the first season's sign-offs) and launch (until the first season ends).
 - *Long-term positions* are few, kept only where really needed and never fewer than safety and the law require: first aid staff at every opening, grounds and maintenance, supervisors for youth helpers, and at Scale B trained ride operators (16+) and a ride-maintenance lead, plus the contracted Qualified Inspector.
 - *Automate the paperwork, not the people*. Scheduling, inventory, records, reminders, reports and paperwork run in shared software (Project OS) rather than by hand. Software never replaces a person that safety or the law requires.
- **Joining later**: people could join these roles later through Project OS, the shared tool our projects use. No role is posted anywhere yet, and no pay, number of people or date is set.
- **A quick guide for every role** (owner direction, relayed by Project OS, Oct 20, 2026; docs/DECISIONS.md #47): one screen each, in docs/package/role-guides.md, covering what you do, who can do it (open, trained or qualified), the training, the safety rules, the shift length, what "done" looks like and who to ask (a role, never a person's name). The guides read like a game: tasks are quests, training unlocks new roles, and badges are for finishing, learning and helping others. Hours, speed and risk are never rewarded, leaderboards are seasonal and opt-in (next item), and safety is never a quest or a challenge. Safety-critical work (ride operation, ride maintenance, inspections, licensed trades and first aid certification) stays with qualified or paid crews and is described plainly.
- **Stats per role and hours worked** come from confirmed records. They are shown to the person, but never ranked and never used for awards.
- **Seasons, leaderboards and a daily limit** (owner direction, relayed by Project OS, Oct 21, 2026; docs/DECISIONS.md #48): seasonal leaderboards and rewards by category, set by each league, with people choosing whether to appear; hours, speed on safety-critical work and risk are never scored. At most 10 hours a day per person across all projects, plus 2 bonus hours a week; volunteer shifts stay at 2 hours or less; lower limits from law or employers win. One profile across projects and the chat live in Project OS.
- **Discoveries**: a bird species in the meadow, a local-history find, a better way to run the carousel line. Each records where, when, the evidence and who verified it.
- **Real credits**: everyone behind a design, document, discovery or accomplishment is credited by name and role, verified by a project lead and kept permanently. Each person chooses how their name appears.

Forming the nonprofit (Checked unless noted):

- **Articles of Incorporation – Nonprofit (DSCB:15-5306)**: \$125 to the PA Department of State. Notice must be published in two newspapers in the county, one a legal journal where possible.
- **Annual report**: required since 2025, \$0 for nonprofits, due June 30.
- **IRS 501(c)(3)**: Form 1023 costs \$600. Form 1023-EZ costs \$275 and is open only to groups with ≤\$50,000 annual receipts and ≤\$250,000 in assets.
- **PA charitable registration (BCO-10)**:

- Due before any paid solicitation, or within 30 days of passing \$25,000 in contributions.
- Fees run \$15–\$250 by contribution size.
- Reviewed or audited financial statements are required above set thresholds (single-source).
- **Name check before forming anything:**
 - No park or business called "Discovery Park" was found in Bethlehem.
 - A federal mark "DISCOVERY PARK OF AMERICA" was reported to cover museum services, held by an out-of-state nonprofit. No source link was kept, so this stays Unknown until a formal USPTO search is run.
 - Bethlehem was reported to have once had a "Discovery Center of Science and Technology" children's museum. No source link was kept (Unknown).
 - Run formal PA Department of State and USPTO searches, and keep an alternative name ready.

12. Phasing and gates

Phase	Illustrative timing	Work	Gate to pass before the next phase
0 · Listen & test	Year 0–2	Surveys, pop-up Discovery Days, nonprofit formation, site inquiries, market study	Gate 1: willing landowner, community support, market study, credible operating budget, reuse-first check (no existing park or facility already meets the need), written cleanup and restoration plan for the site if the pilot stops
1 · Pilot (A)	Year 2–5	Small public discovery park	Gate 2: visits and costs on target, ride operations plan, insurance quotes, capital secured
2 · Family park (B)	Year 5–10	Carousel, family rides, Discovery Barn, food	Gate 3: proven demand, sufficient land, operating surplus, environmental review
3 · Regional (C)	Year 10+	Only if justified	—

Section 10.5 describes what Gate 1's "credible operating budget" has to contain. Gate 1's last two conditions were added in v1.2 (Oct 19, 2026; docs/DECISIONS.md #30): reuse an existing park or facility first if one already meets the need, and know in writing how the site would be cleaned up and restored if the pilot stops.

Permits and reviews needed (all **not requested** as of Oct 19, 2026; deciders depend on the site):

Permit or review	Who decides	Status
Land use agreement (purchase, lease or license)	Landowner (TBD)	Not requested
Zoning / land development	Host municipality (planning commission, zoning hearing board, council)	Not requested
Ride registration, PE statement, monthly inspections	PA Department of Agriculture, Bureau of Ride & Measurement Standards	Not requested
Splash pad (public bathing place permit)	PA Department of Health (plus local plan review where required)	Not requested
Food licensing	Bethlehem Health Bureau inside the city; elsewhere PA Department of Agriculture, unless the host municipality runs its own health department	Not requested
Stormwater / erosion control	PA DEP and county conservation district (thresholds to confirm)	Not requested
Building permits (Uniform Construction Code)	Municipal or third-party code official	Not requested
Floodplain permits, if any floodplain land	Municipality / FEMA program	Not requested

Permit or review	Who decides	Status
Highway occupancy permit, if state-road access	PennDOT	Not requested
Nonprofit formation, 501(c)(3), charitable registration	PA Department of State; IRS; PA BCO	Not requested

12.1 Reuse it anywhere, and beyond Bethlehem

Owner direction, relayed by Project OS, Oct 21, 2026 (docs/DECISIONS.md #49). The method is written up as a nine-part kit in docs/replication-kit.

- **What another town, campus or country would copy:** the method (phases and gates, the four tests, honest labels), the templates and the checklists: site-screening criteria, permits and reviews, money rules and the costs that remain, roles and credits, and test-fit plans.
- **What stays local and must be checked there:** the land and its owners, permits and laws, climate, language, currency and units. Each is checked there, with local people, offices and engineers.
- **Place details in content and data files:** the site's settings file (src/content/site.ts), the other files in src/content/ and the data files hold the place details, so the page code does not change.
- **No people in templates:** the templates carry no people, contacts or private data.
- **Places as data:** the site lists its places in one data file (src/content/places.ts), Bethlehem first, each with its status (existing, planning phase or long-term idea) and its links to other projects (methods shared, never data, nothing agreed). A place is added only when it is real or chosen, with its own research and local review; none is listed yet beyond Bethlehem (owner direction, relayed by Project OS, Oct 21, 2026; docs/DECISIONS.md #52).
- **A copy starts at the beginning:** in its own planning phase, with every permit and review "Not requested" and an empty partner table.
- **Beyond Bethlehem (an aim, not a plan or a promise):** the method could repeat in other Pennsylvania towns, across the United States, for example in the Midwest, and worldwide, with natural energy supplied through regional Energy & Logistics Hubs. No other place is chosen, asked or funded.

13. Capital cost — order of magnitude (placeholders, not estimates)

These ranges **exclude land, financing and inflation**. They rest on the published reference points below plus assumed unit costs. **A professional cost estimator must replace them.** v0.2 lowered the A and B ranges after round 2 found Pennsylvania destination playgrounds costing \$0.4M–\$1M.

Phase	Placeholder range
0 · pop-ups	≈\$50k–\$300k per season
A · small park	≈\$4M–\$12M
B · family park (including A)	≈\$20M–\$65M
C · regional (including B)	≈\$60M–\$150M+

Published reference points (Checked unless noted):

Project	Cost
Lower Paxton Twp, PA, inclusive playground and picnic plaza	\$1M (2024), incl. a \$520k DCNR grant
Hempfield Twp, PA, destination playground for 100–200 children	\$428k approved Jan 2022, incl. a \$369k DCNR grant; ≈\$454k at opening, Jun 2022, with \$100k in donations and in-kind help (TribLIVE; links to the two 2022 articles still to confirm)
Kannapolis, NC, double-decker carousel	\$228k (2015), within a \$1.35M park phase

Project	Cost
Carmel, IN, antique carousel	≈\$2–3M purchase; ≈\$5M total early estimate including move, restoration, land and building (2017). Removed from the bond package
Los Angeles, Griffith Park merry-go-round	\$1M purchase (≈2025), restoration still to fund
Wilkes-Barre, PA, permanent public-square stage	\$548k bid (2022: \$435k federal ARP money plus a \$113k state LSA grant); finished spring 2023. A bid price, not an audited final cost
Parking garage	median ≈\$29,900 per space (2024); surface lots cost far less
Spokane Loeff Carrousel rotunda	≈\$7M (round 1)
Jane's Carousel pavilion	≈\$9M (round 1)
Ovid Hazen Wells Park reopening	≈\$10M (2026, round 1)
Da Vinci Science Center	≈\$80M for 67,000 sq ft (2024, round 1)

The spread between a used carousel (hundreds of thousands) and a signature pavilion (≈\$7–9M) is the main reason Scale B's range is so wide.

14. Top risks

Risk	Mitigation
No land available on workable terms	Start with pop-ups and park partnerships; pursue several leads in parallel
Floodplain sites (common along local creeks)	Keep rides and buildings out of floodways; use flood-prone land only for meadows and trails
Operating deficits	Gates, conservative attendance, reserves, earned-revenue rules
Ride incidents	Professional operations, certified inspection, conservative ride choice, training, transparency
Neighbor opposition (noise, traffic)	Early engagement, buffers, curfews, low-noise rides, transit and trail access
Over-reliance on volunteers or donations	Section 10.1, principle 2; paid core staff; a reliable payer for every core cost (Section 10.5)
Competition with or harm to existing attractions	Complement rather than duplicate; partner with Bushkill, Weona and local museums
Clean-energy incentive deadlines	Treat solar credits as upside only; direct pay only if in service by 2027
Misleading impressions (official backing, partnerships)	Clear disclaimers; no logos; no ticket sales or countdowns
Scope creep toward a full aquarium	Treat it as a separate project with its own feasibility study

15. Known vs unknown

Known (with source)	Unknown (must verify)
Specific large sites that look vacant are sold, cleared for other uses or deed-limited	Which landowner would host, and terms
Northridge: ≥70 ac kept for outdoor recreation; ≈46% open space in master plan	Who will own and maintain it; floodplain along the river
Gall Farm Preserve (the county's "Gall Road" land): Plainfield Twp; ≈149 ac (149.15 ac, Parcels A–E); bought 2003 for a regional park; the county is taking its own development steps. Reference only, not a target	Whether anything is built; the current county plan and schedule; deed and grant terms; parcel boundaries
Bethlehem "40 in 10" plan complete; implementation began Mar 2026	FEMA zones per park; how a pilot fits the plan's priorities
PA ride rules: registration, PE statement, monthly inspections, insurance floors	Carousel ride class

Known (with source)	Unknown (must verify)
Splash pads need a PA DOH bathing-place permit; PA uses the current FDA Food Code	Local plan-review steps for a splash pad
Public carousels charge ≈\$2–\$4 per ride; NRPA median cost recovery is 26%	Local willingness to pay; attendance; operating cost per rider
LANta EBS lines operate; service is being cut; passenger rail is only at Phase II study	Any future transit expansion
Named LANta local routes serve Gracedale, Palmer Park Mall, Westgate, Tower Place and Northridge; Gall Farm and Grube Park touch regional trails	Walking distance from any candidate to an EBS stop
City sewer plant held to 15.5 MGD of its 20 MGD permit	Capacity available for a specific site
PPL serves the City of Bethlehem and Grube Park; PPL net metering goes up to 3 MW; PPL Level 1–2 interconnection fees	Which utility serves Moore Park, Housenick and Gall Farm; electric capacity at any site; Met-Ed (FirstEnergy Pennsylvania) steps and fees
Federal solar credit requires service by end-2027	Interconnection study and upgrade costs for a real site
Two-county population ≈708,600 and growing; Bethlehem median income below state	Age profile; market area demand
What an operating budget must cover, and who could pay (structure in Section 10.5)	Capital and operating costs (professional estimates); zoning district permissions; noise ordinance text; name availability

16. Next steps

Decided

These are decisions about the project, made by the owner or at the owner's request. None of them is a permit or an agreement from any agency or landowner.

- **Overall direction:** Phase 0 → A → B (gated) → C (only if justified); build the website and final visuals. This is the owner's chosen direction for the project, not a permit or an agreement from anyone else (docs/DECISIONS.md #8; three scales #2).
- **Visual style** for the website and sheets (docs/DECISIONS.md #5, confirmed under #8).
- **Public contact** for the website (docs/DECISIONS.md #12).
- **Kindness first:** free is the goal, including rides; something is only free when someone reliably gives or pays for it (docs/DECISIONS.md #9).
- **Separate projects:** Bethlehem Connect and the Ocean Discovery Center stay separate; the park keeps only a stop placeholder and a small ocean corner (docs/DECISIONS.md #11).
- **Ways of working:** Project OS conventions (#10), the regional "organize by function" lens (#16), and the website stack and hosting (#13).
- **v1.1 wording settled with the owner (Oct 18, 2026; logged as docs/DECISIONS.md #17, #18 and #20):** the ride price wording in Section 10.0, the gate list in Section 12, and Gall Farm Preserve as reference only.
- **v1.2, decided by Claude under the owner's delegation (Oct 19, 2026; logged as docs/DECISIONS.md #28 and #30):** no income tests (Section 10.1, principle 4), so the EBT/SNAP discount idea is dropped; and two more Gate 1 conditions in Section 12, a reuse-first check and a written cleanup and restoration plan.
- **Also decided by Claude under the owner's delegation (Oct 19, 2026; logged as docs/DECISIONS.md #24, #26 and #27):** the license, MIT for the code and CC BY 4.0 for the written content and drawings, which applies once the license files (LICENSE, LICENSE-CONTENT.md) are in the repository; the owner adds them by merging a separate pull request (the repository stays private for now, #25, so reuse also needs access); the public stage word (since v1.3, "Planning phase"); and the website's related projects list keeps only the projects this park has an optional link with, so the Bethlehem Space & Exploration Center is not added.

- **v1.3 wording (Oct 19, 2026; logged as docs/DECISIONS.md #33 and #38):** on the owner's direction, relayed by Project OS, "In planning" first replaced the earlier framing (#33), and v1.3 also moves the public wording to "Planning phase" (#38); Claude chose the details under the owner's delegation. The status line is "Planning phase. An independent plan; nothing is funded or built yet." The public stages are planning phase, design, building and open. The project stays independent and not an official project of anyone named, every permit and review stays "Not requested" until there is a written record, the website names no chosen site, and the drawings carry the stamp "Planning sheet v1.3 · Oct 19, 2026 · Planning phase — illustrative layout, not a site plan", because their layouts are still test fits on sample parcels. Wording only: no new research.

Round 2 closed (Oct 18, 2026): demographics, NRPA benchmarks, PA cost references, Bethlehem zoning structure, food licensing, water and sewer, Climate Action Plan, trails, passenger rail, site follow-ups, playground/splash pad/food/teen-worker rules, nonprofit formation and hosting terms.

v1.1 closed (Oct 18, 2026): Gall Farm Preserve's municipality and acreage; who supplies electricity in the study area and PPL's service, solar and net-metering steps; transit and trail access per site; food licensing outside Bethlehem; the splash pad permit; teen-worker and lightning rules; trail lengths; Northampton County income and poverty; missing source links.

Website hosting note (Checked): Vercel's free Hobby plan is for personal, non-commercial use. Its docs disagree on whether asking for donations counts as commercial. A project information site with no donations or ads fits Hobby. If a nonprofit later fundraises on the site, move to Vercel Pro or Cloudflare Pages (free plan; 500 builds per month). Cloudflare Registrar sells .org at wholesale cost, and Cloudflare Email Routing forwards a project address to any inbox for free when Cloudflare runs the domain's DNS.

Still open

Owner decisions pending:

- **First feasibility question** to the Lehigh Valley Planning Commission: prepared and on hold while the main location is being finalized (Section 3.6; docs/DECISIONS.md #40).

Best handled by records requests or calls, not web search (calls only with the owner's OK):

- Bethlehem zoning: which districts permit outdoor commercial recreation (read §1305.01 directly).
- Official noise ordinance text (Article 717).
- Golf Club and Sand Island acreage and FEMA zones (county GIS, FEMA Flood Map Service Center).
- Carousel ride class under 7 Pa. Code Ch. 139 (PA Department of Agriculture).
- Formal PA Department of State and USPTO name searches (these also settle the name items in Section 11).
- Operating cost per rider and current ride revenue for public carousels (Montgomery Parks, Spokane Parks, Pen Argyl).
- Full official ADA §234/§240 text from the U.S. Access Board.
- Electricity: which utility serves Louise W. Moore Park and Housenick (a utility address lookup or parcel map); Met-Ed (FirstEnergy Pennsylvania) new-service and solar steps; electric capacity at any real site (PPL Business Accounts, once there is a project).
- Access: walking distance from each candidate to the nearest EBS stop (LANta's EBS stop locator or trip planner).
- Source gaps: Christkindlmarkt and Lehigh Valley Zoo visitor counts; the "40 in 10" plan's total cost (final report); links to the two 2022 Hempfield articles; official guidance pages for IBCCES and DarkSky International; a source for the Little Bushkill Creek stream listing.

Gall Farm Preserve, for reference only (not a target): what the county has built or scheduled since 2024; whether the 2019 master site development plan is still current; deed and grant terms; parcel boundaries (the only point found is a third-party listing); preserved-farmland or Agricultural Security Area status; whether Plainfield Township is still in LANta's Flex 502 zone; which electric utility serves it.

17. Visual index

#	File	What it shows
2	public/concept/02-site-search-map.svg	Real county lines, rivers and highways; approximate site points; 5/10-mile rings
4	public/concept/04-plan-a-small-discovery-park.svg	Scale A test fit, 10 ac
5	public/concept/05-plan-b-family-attraction-park.svg	Scale B test fit, 28 ac
6	public/concept/06-plan-c-regional-expansion.svg	Scale C test fit, 75 ac
7	public/concept/07a-07f-render-*.svg	Six sample illustrations, one per park area
8	public/concept/08-paths-transport-utilities-access.svg	Accessible routes, fire lanes, utilities, solar, transit, first aid

Sheets 1 (overview), 3 (candidate comparison), 9 (ride and facility footprints) and 10 (phasing, safety, costs and governance) were retired on Oct 21, 2026 (docs/DECISIONS.md #51): the website gives the same content as text and tables, which read better on every screen. The remaining drawings keep fine print, keys and notes in the page captions, not in the picture.

All visuals are generated from scripts/ (Python 3 with fonttools and brotli; text uses an embedded subset of Atkinson Hyperlegible so it renders the same everywhere). Base map data: U.S. Census Bureau county boundaries via us-atlas; Natural Earth 1:10m rivers, roads and urban areas (public domain).

18. Sources

Accessed October 18, 2026, via search extracts. Re-open each original before public use.

Lines starting **v1.1:** were added in the version 1.1 update (Oct 18, 2026): the owner's Gall Farm correction from county records, plus three focused searches (electricity service, transit and trail access, missing source links; Section 2). They are search extracts too. All other lines come from round 1, except the "Round 2 sources" group.

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- v1.1: Grube Park address (Discover Lehigh Valley listing) — <https://www.discoverlehighvalley.com/directory/northampton-county-pennsylvania-game-commission-archery-ranges/>
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