



CHAPTER 9
BUSINESS
PLAN

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Bike share programs in the U.S. are operated and structured in various ways. Each community exploring bike share must define its own model by considering the program strategic goals, funding environment, stakeholder interest and capacity, and the political environment.

For Wilmington the development of a business model includes defining the governance structure and operating model, analyzing the capital and operating costs, and understanding the implications of implementing such a system. The following section outlines the key decisions and provides recommendations for how the City should proceed in implementing its bike share program.

GOVERNANCE STRUCTURE

The critical path for implementation is the selection of an appropriate governance structure and operating model for the program. This decision is based on the jurisdiction’s funding environment, institutional capacity, and local transportation priorities. In general, the following steps are required to mobilize and operate a bike share system:

- Obtain political, public, and other support.
- Fundraise for initial capital and operating costs.

- Procure an equipment vendor and system operator.
- Administer the contract with the operator.
- Operate the system.
- Evaluate and expand the system.
- Negotiate and oversee system sponsorships or an advertising vendor.

These functions may be undertaken by one or more organizations. While there are variations on how each system is implemented, the most common operating models in the U.S. include systems that are non-profit owned and operated, privately owned and operated, and publically owned and privately operated. The relationship between system owners and operators in select U.S. peer bike share systems is shown in **Figure 41**.

The advantages and disadvantages of each of these models are reviewed below:

NON-PROFIT OWNED AND OPERATED

Under this model, a Non-Profit Organization (NPO) takes on responsibility for the management and day-to-day operations of the system. Funding for equipment typically comes to the nonprofit in the form of public, private, and/or



Figure 41: Relationships between system owners and system operators in selected U.S. systems

philanthropic sources. Most cities use some form of grant funding for capital purchases. Under the recently adopted Federal Transportation Legislation, Fixing America's Surface Transportation Act (FAST Act), NPOs are eligible recipients of federal transportation funding for bicycle projects, including bike share.

The NPO also takes on responsibility for ongoing fundraising to pay for system operations. This typically comes from a combination of user revenues, donations and philanthropic contributions to the NPO (although these tend to be only 5 to 10 percent of the operating budget), and sponsorship of the system's assets. Fundraising can take up a significant amount of staff time. U.S. systems that currently employ this model include Nice Ride Minnesota, SLC GREENbike, Boulder B-cycle, and Charlotte B-cycle (see **Figure 41**).

Advantages:

- Maximum fundraising diversity.
- Community-oriented missions of non-profits align with many of the goals of bike share and are well received by the public.
- Able to span jurisdictional boundaries.
- Transfers risk and ongoing financial responsibility

from the City, but maintains some level of transparency through City representation on the NGO's Board of Directors.

- Any profits are reinvested into the system.
- Generally more cost-effective because operating standards are minimal, organizations are small, and assistance is often provided through in-kind services.

Disadvantages:

- A new NPO can take time to establish and build the necessary capacity. This may not fit the project timeline.
- Financial and operating performance are not the only priorities.
- Skills and experience will need to be learned over time.
- Typically there are no or limited performance standards for operations.

A variation of this model is a non-profit owned program with a private operator (e.g., the Pronto Cycle Share system in Seattle, WA).

In Wilmington, no existing NPO's were identified as obvious candidates to take on a bike share program, meaning that a new non-profit may be necessary if this model is selected.



Charlotte B-Cycle



Citibike Miami Beach

PRIVATELY OWNED AND OPERATED

A privately owned and operated system brings established skills and experience; however, it also depends on the financial potential of the system to attract private investment. This model minimizes the jurisdiction's financial risk but also removes some of the agency's control over the program (e.g., reduced control over decisions on how and where the system will expand). The model's funding options are limited to whatever the private sector is able to bring to the table. In many smaller and mid-sized communities, the potential for privately owned and operated systems is low due to the size of the market and its ability to attract large-scale sponsorship. Bike share systems currently operating with this business model include Citibike in New York, NY and Miami, FL and Grid in Phoenix, AZ (see **Figure 41**).

Advantages:

- Removes risk and financial responsibility from the City.
- Private operator motivated to ensure visible success of the program (i.e. high ridership and

profitability).

- Private sector brings established skills to the program.
- Easy to expand across jurisdictional boundaries.

Disadvantages:

- Market driven- depends on interest from the private sector.
- Reduced agency control and less transparency than other models.
- Funding options are limited to what a private company can secure.
- The agency has less control over the use and re-investment of profits.
- Expansion is typically market driven making it more difficult to achieve geographic and social equity goals.

The small scale of the market in Wilmington may not be conducive to a privately run program. However, this interest can be tested prior to going to RFP if this approach is desirable.



Indego

PUBLICALLY OWNED AND PRIVATELY OPERATED

An agency owned and managed system is a popular governance structure and is the model for some of the largest bike share systems in the U.S. Under this model, a government agency (e.g., the City, the regional planning organization, or a regional transit agency) takes on financial responsibility for the program and owns the system infrastructure including the stations and the bicycles. The agency selects which other functions it will take on and those that they will contract to a third party (e.g., operations, marketing, promotions, etc.). The agency would then procure services, including an equipment vendor and operator, and manage contracts with these service providers.

Under this model, the agency maintains full control of the system, including where stations are placed, the operating standards to be maintained, the look and branding of the system, where it expands, etc. However, this model is dependent on agency interest and capacity and dedicated staff are required to manage the program. As public entities, this model affords agencies access to federal funding in the form of grants (e.g., Congestion Mitigation and Air Quality (CMAQ)) for capital expenditures.

Advantages:

- Maximizes agency control and transparency.
- Offers access to federal funding.
- Agency mission can be reflected in the goals of the bike share program.
- Any profits and additional funding can be reinvested into the system – potentially to fund geographic and social equity programs.
- Makes use of the established skills of a private operator.

Disadvantages:

- Risk and ongoing financial responsibility are taken on by the agency.
- Financial and operating performance is not the only priority.

Initial conversations with stakeholders and the project management team identified Delaware Transit Corporation (DTC), known publicly as DART, to become the managing agency of the proposed bike share system. As the regional transit agency, DART currently has the expertise of managing third party operators for its bus fleet, in addition to having access to a diversified funding portfolio, experience working with various local and regional partners, and an active presence in Wilmington and throughout the state. Further conversations will be needed to finalize any decisions.

RECOMMENDED MODEL



Based on Wilmington's current funding environment, local transportation needs, and input from local and regional stakeholders, it is recommended that the area pursue an agency owned and privately operated governance structure. In particular, DTC was identified as a potential agency to take on the responsibility of managing the program. This will require further discussions with DTC and other agencies about their interest and capacity. However,



as DeIDOT's operating division designed to provide public transportation for all Delaware residents, DART is a logical choice for further consideration and has:

- A proven history of cooperation with other city, regional and state agencies (such as the City's Departments of Public Works and Planning) that will play a major role in implementing the program. Good inter-governmental communication is necessary to ensure station siting and permitting runs smoothly.
- A clear and sustained interest in overseeing a bike share program. Ownership of the program is a long-term commitment and based on conversations between the City, DeIDOT, DART, and local stakeholders, implementation of a bike share program fits within the vision and mission of the organization.
- Their expertise in managing transportation/transit services contracts. DART has experience working with private vendors to handle day-to-day operations for its bus operations, and as such it has the institutional capacity and knowledge to administer and provide contract oversight to a bike share operator.
- An active presence in Wilmington and beyond. As the regional transit agency, DART has a good understanding of local conditions, as well as knowledge of successful public outreach efforts throughout the greater Wilmington area, both of which will be of value in promoting the proposed bike share program. This will also allow the program to expand to the rest of the City and to the greater region over time.
- Staff capacity to administer the program. Most agency operated bike share programs have one dedicated staff member to manage day-to-day relations with the vendor and publically represent the agency with regards to bike share implementation. While this position is expected to be full time prior to launch (usually for the first six months of the program) this position may only require 40 to 60 percent of a full time position.⁹⁷

The typical duties fit well within a transit agency and it may be possible to role bike share duties in with other responsibilities to create a new full time position.

- Direct access to federal funding for capital expenditures. As a public agency under the umbrella of DeIDOT, DART currently has access to City, State and Federal Funds which will be useful in covering the expected capital expenditures related to the procurement of bike share equipment.

FINANCIAL PROJECTIONS

PROJECTED COSTS

The costs related to bike share implementation are typically divided into 1) capital, 2) startup, and 3) operating costs. Capital costs include any expenses for equipment (i.e., bicycles and stations), parts, site planning, and installation. Startup costs include those expenditures directly related to the launch of the system including administrative salaries, purchasing and set up of administrative equipment and resources (e.g., IT, communications, website, call center, etc.), marketing, and insurance. Operating costs include all day-to-day expenses, including system management, marketing, and operating fees paid to the vendor.

Capital Costs

Capital costs for the proposed system are estimated to be between \$1.5 M and \$2.1 M depending on the type of equipment selected (see **Chapter 2**) and would be divided into two phases. Capital costs include new stations, bicycles, and installation costs. All costs are based on the proposed phasing of an initial launch in Year 1 of 20 stations/hubs, 200 bicycles, and 340 docks and a subsequent addition of 10 stations/hubs, 100 bicycles, and 170 docks in Year 3.

Equipment Purchase

Capital costs were developed from current prices quoted by smart dock and smart bike equipment vendors. These were compared assuming an average station size of 17 docks, 10 bicycles, an automated kiosk, and an advertising panel for smart dock systems, and a comparable 17 customized bike racks, 10 bicycles, and an interactive kiosk for smart

conversations with existing bike share project managers for Capital Bikeshare; Indego and Zyp Bikeshare.

⁹⁷ This range was derived from industry best practices and

Table 10: Projected Capital and Installation Costs (SMART BIKE)

	Year 1	Year 2	Year 3	Year 4	Year 5	Total Costs
Phase 1 - Capital Purchase and Installation	\$ 800,000	\$ -	\$ -	\$ -	\$ -	\$ 800,000
Phase 2 - Capital Purchase and Installation	\$ -	\$ -	\$ 425,000	\$ -	\$ -	\$ 425,000
System Startup	\$ 215,000	\$ -	\$ -	\$ -	\$ -	\$ 215,000
Agency Administrative Costs, Pre-Launch	\$ 85,000	\$ -	\$ -	\$ -	\$ -	\$ 85,000
Total Capital and Startup Costs	\$ 1,100,000	\$ -	\$ 425,000	\$ -	\$ -	\$ 1,525,000

Table 11: Projected Capital and Installation Costs (SMART DOCK)

	Year 1	Year 2	Year 3	Year 4	Year 5	Total Costs
Phase 1 - Capital Purchase and Installation	\$ 1,170,000	\$ -	\$ -	\$ -	\$ -	\$ 1,170,000
Phase 2 - Capital Purchase and Installation	\$ -	\$ -	\$ 620,000	\$ -	\$ -	\$ 620,000
System Startup, Pre-Launch	\$ 215,000	\$ -	\$ -	\$ -	\$ -	\$ 215,000
Agency Administrative Costs, Pre-Launch	\$ 85,000	\$ -	\$ -	\$ -	\$ -	\$ 85,000
Total Capital and Startup Costs	\$ 1,470,000	\$ -	\$ 620,000	\$ -	\$ -	\$ 2,090,000

bike systems. The average capital cost for a smart dock station is \$55,000 and for a smart bike station is \$40,000.⁹⁸ The model assumes a three percent price inflation for equipment purchases on Year 3.

Installation

Installation costs are \$3,500 per station that includes design of the station, site improvements (which assumes that 10-percent of stations will require the construction of a concrete pad or some other improvement), and installation of the station. **Table 10** and **Table 11** summarize the projected capital and installation costs for smart bike and smart dock systems.

Startup Costs

There are a number of start-up costs that are incurred during the pre-launch period, which is the approximately six month period prior to launch. These costs total approximately \$300,000 and include:

- Agency administrative costs: the cost to the agency to hire staff to coordinate the launch effort. This assumes a cost of \$85,000 to hire a bike share program manager and utilize other city resources during the 6 months prior to launch.

- System start-up costs, which include costs to the selected vendors to establish the program. These costs include:
 - Staff costs such as the hiring of a general manager, an operations manager, a marketing coordinator, and assembly and installation staff for the six month period prior to the launch of the system.
 - Administrative costs such as insurance, legal, and accounting.
 - Marketing costs which may include hiring an agency to establish the name and brand of the system, develop the website, customize marketing materials (brochures, collateral, etc.), and hire event staff.
 - Direct operational costs such as leasing a warehouse/operations center, vehicle costs, purchasing uniforms, supplies and equipment, and employee training.

Table 12 provides a full breakdown of projected startup costs.

Operating Costs:

Operating cost estimates are usually calculated on a per-dock-per-month basis. This approach is taken because docks are a relatively stable piece of infrastructure with costs

⁹⁸ These costs are based on averages derived from information provided by bike share equipment vendors including B-cycle, NextBike, Social Bicycles, and Motivate.

Table 13: Projected Operating Costs per Phase per Year

Phase	Year 1	Year 2	Year 3	Year 4	Year 5	Total Operating Costs
Phase 1	\$ 430,000	\$ 440,000	\$ 455,000	\$ 470,000	\$ 480,000	\$ 2,275,000
Phase 2	\$ -	\$ -	\$ 230,000	\$ 235,000	\$ 240,000	\$ 705,000
Total Per Year	\$ 430,000	\$ 440,000	\$ 685,000	\$ 705,000	\$ 720,000	\$ 2,980,000

Table 12: One Time Startup Costs (6-month pre-launch period)

Startup Expense Item	Costs
Total Personnel Costs	\$ 101,500
Agency Administrative Costs	\$ 85,000
Total Facility Costs	\$ 4,000
Total Vehicle Costs	\$ 2,500
Total Supplies & Spares	\$ 50,000
Total IT & Communications (excl. Call Center)	\$ 1,500
Total Call Center Operations	\$ 15,000
Total Office & Administrative costs	\$ 2,500
Total Professional Fees	\$ 11,000
Total Marketing (non-Personnel)	\$ 10,000
Total Insurance	\$ 15,500
Total Startup	\$ 298,500

that do not vary on a daily basis due to repairs, rebalancing, and seasonality, unlike bicycles. These costs are negotiated at the beginning of each contract period with the bike share operator and remain constant for the duration of the contract, unless otherwise specified. These costs usually include the following services: remote management of the station’s electronic access system, station rebalancing, station cleaning and maintenance, bicycle maintenance, running the call center, administration, marketing, and website hosting.

A \$105 per-dock-per-month operating cost was assumed for the first year of operations and rising three percent each year.⁹⁹ This rate includes some allowance for spare parts and bicycle replacement (due to theft, vandalism,

⁹⁹ Based on potential labor costs and real expenses for a system Wilmington’s size. The operating costs in existing bike share systems are generally between \$65 and \$135 per dock per month. The operating cost will ultimately be determined by (1) the wages and salaries offered by the operator; (2) the level of service and intensity of system rebalancing required; and (3) operational efficiencies that can result in cost reductions (e.g., in-kind donations, use of City-owned property for operating space, etc.).

and regular wear and tear).¹⁰⁰ There is less information on smart bike operations costs, so the same operating costs were assumed to apply to both the smart bike and smart dock systems. Projected operating costs for the two phases of the system are shown in **Table 13**.¹⁰¹

PROJECTED REVENUES

There are three basic drivers of system revenue: annual membership, casual membership, and usage fees. To forecast potential revenues, this analysis assumes the price structure shown in **Table 14** which is similar to the pricing structures of many other bike share systems.¹⁰² Revenue drivers and their related model inputs are summarized in **Table 15** and are based on trends observed in peer cities.

Table 14 Suggested Fee Schedule for Wilmington Bike Share

Access Fee		Usage Fees	
		0-30 mins	Additional Half Hours
Annual	\$70	\$0.00	\$2.50
24-hour	\$8		

Table 15: Comparison of Model Inputs for Case Study Bike Share Cities

	Charlotte	Columbus	Washington	Model Input
Trips per casual member	1.8	0.2	0.7	1.1
Trips per annual member	26.7	44.9	90.4	54

¹⁰⁰The replacement of some spare parts will be covered by warranty and/or equipment insurance and therefore is not included in the financial model.

¹⁰¹Figures have been rounded to the nearest \$5,000.

¹⁰²The model of a membership fee, free-ride period, and usage fees for longer rides is a potential barrier to entry for lower socio-economic populations. While there are options to incorporate different pricing structures such as a monthly fee with a certain number of free “minutes” (similar to a cell phone plan), or a “per ride” trip fee (similar to how transit is priced), a traditional pricing structure was used for this analysis.

Annual Membership Revenues

- Annual membership fee: the model assumes a \$70 fee to become an annual member. This amount is within the current range of fees in the U.S.
- Annual members per bike per 100,000 residents: the model assumes that the system will have 0.0028 persons/bicycle/100,000 residents purchasing annual memberships and that this will grow five percent annually. This number was derived from a comparative analysis of existing peer systems. The model does not include any special membership promotions or group sales to increase membership.

Casual Membership Revenues

- Casual membership fee: The model assumes an \$8 daily fee to become a 24-hour member. This amount is in the range of current fees in the U.S.
- Casual members per station per year: Casual members typically learn about a bike share system by seeing a station. Therefore, the pro forma uses the metric of casual members per station to estimate casual membership. The model assumes that on a yearly basis, Wilmington will attract 700 casual members per station.

Usage Fees

Available data from other U.S. systems was used to estimate revenues for the proposed system including:

- Rides per member: Data shows an average of 54 rides per year per annual member amongst peer cities. For casual members, data show approximately 1.1 rides per member. These have been used to calculate ridership for Wilmington.
- Percent of rides incurring usage fees: Data show that approximately five percent of member trips and 40 percent of casual trips incur usage fees.

These numbers are consistent across the systems for which data is public.

- Average usage fee incurred: The average usage fee incurred for annual members ranges from \$4 to \$6 for annual members and \$6 to \$10 for casual members. The pro forma assumes an average usage fee of \$4 for annual members and \$8 for casual members.

FORECAST RESULTS

Using the cost and revenue forecasts above, a pro forma was prepared to forecast membership and ridership, summarize system costs and revenues, calculate system performance metrics, and identify any potential funding shortfall. The pro-forma includes a five-year forecast, which represents the typical length of bike share contract. The pro-forma is included in **Table 17**. The output was checked against metrics from peer cities (see **Table 16**) and summarized below.

Membership and Ridership

- Trips per bike per day: Used globally to measure system usage. The pro forma predicts an average ridership of approximately 0.97 trips per bike per day over five years. While this number is reasonable for a city of Wilmington's size, it is below the average rate of 1.3 trips per bike per day observed in peer cities.
- Percentage of casual and annual member rides: The forecast output predicts a split of approximately 78 percent of rides made by annual members and 22 percent by casual users. This split is weighted more towards annual members than in peer cities because there are fewer tourists in Wilmington in comparison to other peer cities and one of the system goals is to focus on providing transportation services to residents.

Table 16: Comparison of Performance Measures to Peer Cities

	Charlotte	Columbus	Washington, DC	Peer Systems Averages	Forecast for Wilmington
Trips per Bike per Day	0.5	0.5	2.7	1.3	0.97
Annual/Casual Ridership Split	40% / 60%	68% / 32 %	80% / 20 %	63 % / 37 %	78.2 % / 21.8 %
Farebox Recovery	52%	45%	72 %	56%	55.0 %

Table 17: Operating Cost and Ridership Projections

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Infrastructure						
Stations	20	20	30	30	30	30
Bikes	200	200	300	300	300	300
Docks	340	340	510	510	510	510
Membership and Ridership						
Annual members	1,008	1,058	1,667	1,750	1,838	7,322
Casual users	14,000	14,000	21,000	21,000	21,000	91,000
Annual member rides	34,564	56,160	78,022	92,875	97,519	359,140
Casual user rides	15,400	15,400	23,100	23,100	23,100	100,100
Total rides	49,964	71,560	101,122	115,975	120,619	459,240
% Rides Casual	30.8%	21.5%	22.8%	19.9%	19.2%	21.8%
% Rides Annual	69.2%	78.5%	77.2%	80.1%	80.8%	78.2%
Capital and Startup Costs						
Capital Purchase and Installation	\$ 1,170,000	\$ -	\$ 620,000	\$ -	\$ -	\$1,790,000
System Startup (does not include Agency Admin costs)	\$ 215,000	\$ -	\$ -	\$ -	\$ -	\$ 215,000
Agency Administrative Costs (Pre-Launch)	\$ 85,000	\$ -	\$ -	\$ -	\$ -	\$ 85,000
Operating Costs						
Total Agency and Operating Costs	\$ 470,000	\$ 485,000	\$ 730,000	\$ 750,000	\$ 770,000	\$ 3,205,000
Revenues						
Total System Revenues	\$ 240,000	\$ 245,000	\$ 375,000	\$ 385,000	\$ 390,000	\$ 1,635,000
Total Operating Shortfall	\$ (190,000)	\$ (195,000)	\$ (310,000)	\$ (320,000)	\$ (335,000)	\$(1,350,000)
Farebox Recovery	51.0%	51.0%	51.0%	51.0%	51.0%	51.0%
Fundraising Need (System Revenue netted out of operations)	\$ 1,650,000	\$ 195,000	\$ 930,000	\$ 320,000	\$ 335,000	\$ 3,430,000

Finances

- Farebox recovery: This factor is important in understanding the financial needs of the system. The pro forma shows that around 55 percent of operating expenses are expected to be recouped through membership and usage fees. This is close to the peer city average. Expected farebox recovery is within the range of other jurisdiction-owned and managed bike share systems operating in cities of similar size (e.g., Arlington, VA – part of Capital Bikeshare operates at 58 percent farebox recovery).
- User revenue split: User revenues are expected to be split approximately 31 percent from annual membership sales, 45 percent casual membership sales, and 24 percent from usage fees. Data for this metric is not released by all cities; however, in most cities this split is approximately equal with 33 percent of revenue from each type.

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