Sustainability MATTERS

Public Transportation cuts greenhouse gas emissions.

Electric Vehicles decrease dependence on fossil fuels.

Mobile Ticketing and Fare Payment Cards reduce paper and energy use.

Solar-powered Lights brighten bus stops and bus shelters.

Drought-tolerant Landscaping saves water and reduces maintenance.

Motion Sensors regulate lights and HVAC systems to save energy.

LED Bulbs use less energy and last longer.

Quiet Zones and Sound Walls reduce noise pollution.

Adaptive Reuse gives new life to old buildings.

DART is committed to environmentally conscious activities that provide mobility and protect nature both now and in the future.

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Public transportation is eco-friendly by nature. Buses, trains, streetcars and vanpools take single-occupancy vehicles off our congested roadways. Fewer vehicles and faster commutes lower the emissions of greenhouse gases and other pollution.

While improving mobility is DART’s greenest contribution to the environment, the agency is committed to sustainable practices in many areas of its operations.

**Low-emission vehicles reduce carbon footprint**
In July, DART began operating its new fleet of all-electric buses on the D-Link route (see Page 3.) These battery-electric buses produce zero tailpipe emissions, require no oil changes and reduce the agency’s dependence on fossil fuels.

The electric buses join the DART Light Rail trains and Dallas Streetcar vehicles as zero-emission members of the agency’s transit fleet.

**Green practices save energy, decrease waste**
DART’s GoPass® app and GoPass® Tap cards provide mobile ticketing options that reduce the need to print and distribute paper tickets and passes. Customers gain convenience while the agency reduces material and energy use.

Approximately 70 percent of DART’s passenger shelters have solar-powered lights. There are also 100 freestanding solar-powered LED bus stop lights throughout the system to improve security for riders and make it easier for bus operators to see waiting passengers.

At the Northwest Rail Operating Facility, motion detectors trigger the lights only when the area is in use. When unoccupied, spaces like hallways, conference rooms and bathrooms are dim or dark to save electricity. The HVAC system recognizes whether the room is occupied or empty and adjusts itself accordingly.

The agency’s Maintenance Department has gone green as well, using only the lowest-impact chemicals for cleaning parts and other tasks. The agency recycles up to 22,000 gallons of antifreeze per year, and recycles all plastic jugs, aluminum cans and paper.

DART Police Headquarters, located in the historic Monroe Shops building, was honored by the United States Green Building Council as the first publicly owned building listed on the National Register of Historic Places to achieve the LEED® Platinum Certification, the organization’s highest recognition. The building features Energy Star®-rated systems, daylight-responsive controls, and water-efficient faucets, shower heads and toilets to reduce power and water consumption.

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The Electric Ride

Zero-emission buses cruise the D-Link route

Downtown Dallas’ magenta and yellow buses are now a lot greener.

DART has deployed its new fleet of battery-electric, zero-emission buses on D-Link Route 722.

The agency received a $7.5 million grant from the Federal Transit Administration’s Low or No Emission Vehicle Deployment Program (LoNo Program) toward the purchase of seven electric buses and the infrastructure to charge and maintain them. Grants from the LoNo program are helping more public transportation agencies integrate these cutting-edge vehicles into their fleets.

“Battery-electric power may be the next big thing in bus technology, so we’re interested to see how these vehicles work for DART,” said Darryl Spencer, interim senior assistant vice president of engineering. “We chose the D-Link route because the bus operates in a loop suitable for the battery life range, and Convention Center Station provided a good place to install the fast-chargers.”

DART selected 35-foot Catalyst® transit vehicles made by Proterra at its Greenville, South Carolina plant.

Go on a power trip

Eight battery packs power the bus – six on the bottom and two on the top. Each vehicle can travel up to 30 miles on a full charge, which is more than enough for D-Link’s current 19-mile route. The rechargeable battery technology is like that used on the Dallas Streetcar.

Two overhead fast-chargers at Convention Center Station enable the buses to power up via a roof-mounted charging dock while they wait for customers. The vehicles recharge quickly, going from 10 percent state of charge to 90 percent in about 10 minutes.

At night or during maintenance activities, the buses can plug into one of two plug-in depot chargers, located at the bus operating facility. The buses start the next day of service at full power after an initial quick charge at Convention Center Station.

Generate less waste, pollution

Since these electric vehicles emit no tailpipe pollution, each bus reduces carbon dioxide emissions by nearly 244,000 pounds per year versus a diesel bus. Each bus seats 28 people, which means fewer personal vehicles on the roadway.

Proterra electric buses also use 30 percent fewer parts than a traditional bus and do not require oil changes or exhaust after-treatments. An electric bus’s modular configuration gives DART the flexibility to change or upgrade the energy storage and charging systems as transit needs evolve.

The carbon fiber-reinforced composite body is impact- and corrosion-resistant. With so little maintenance needed, each vehicle is cheaper over its lifetime compared with other alternatives, such as a hybrid-diesel or natural gas-fueled bus.

Proterra’s bus body is also much lighter than its steel counterparts, reducing the wear and tear on public roads.
Bouncing off the Sound Walls

**Barriers will reduce Cotton Belt noise**

DART is making exciting progress on the Cotton Belt Corridor Regional Rail Project. The agency is finishing the Environmental Impact Statement (EIS) based on comments on the Draft EIS during its 45-day public comment period, which ended in early June.

One concern raised during the Draft EIS review was the proposed height of sound walls that will serve as noise barriers. DART had planned to build 12-foot sound walls within the DART-owned right of way in certain residential areas of Carrollton and Dallas, where the EIS study projected noise impacts.

Chad Edwards, assistant vice president of capital planning, said a 12-foot wall in these areas will mitigate the noise. But some citizens were concerned the walls wouldn’t be high enough.

So, DART erected two sample walls to show the difference between 12 and 15 feet. While the demonstration walls were not indicative of the materials, construction or finish of real sound barriers, DART hoped to provide community members an opportunity to examine the wall height for themselves.

“It’s difficult for people to envision how a wall will look in a drawing. But when you see the wall in its element, you have a much better sense of how it will fit into the aesthetics,” Edwards said.

The agency staged the demo near Preston Green Park, a Dallas-owned neighborhood park that borders the Cotton Belt Corridor. Approximately 180 residents visited the site, which was available July 30 through Aug. 4, to view the demonstration walls and talk with DART staff.

Based on residents’ comments, DART now plans to construct 15-foot noise barrier walls in all locations to provide additional sound and visual screening. The environmental analysis identified the need to construct 22,250 lineal feet (4.2 miles) of noise barriers in 20 sections near locations with noise impacts.

**Quiet zones will reduce most noise**

The noise and vibration study found the major source of potential noise from the Cotton Belt Project is from train horns that operators would sound at the numerous at-grade crossings along the proposed rail alignment. By implementing quiet zones at grade rail crossings, DART will eliminate 95 percent of the noise impacts.

In quiet zones, which the Federal Railroad Administration must certify, train operators only sound the horn at road crossings in emergency situations rather than as a standard operating procedure.

“People worry that the Cotton Belt noise will be as loud as a freight train,” Edwards said. “The diesel-electric passenger trains that DART plans to buy are so much quieter.”

Learn more: DART.org/CottonBelt
New Landscaping Saves Water and Money

At DART’s rail stations and transit centers, trees provide needed shade for customers. Landscaped borders help absorb heat reflected by hard surfaces and beautify transit facilities.

In a region where summer unofficially lasts half the year and watering restrictions can be imposed year-round, caring for greenspaces can be challenging.

DART is lowering its water consumption and reducing landscaping costs by replacing trees and plants at its older rail stations and transit centers. The new native and adapted plants are more drought-tolerant and will require less pruning and replanting.

At the Kiest and VA Medical Center stations, for example, the agency has installed yucca, sage and agave plants in beds of decomposed granite.

Along the original Red and Blue lines, DART is replacing end-of-life trees with more compact shrubs where Oncor power lines parallel the rail right of way. The agency also is exchanging dense hedges for smaller plants, so rail operators and customers have better sight lines.

“Updating our landscape design means that we can reduce watering and other maintenance, both of which will save DART money,” said Brenda Sadberry, passenger amenities/facilities services manager.
DART Current and Future Rail Services

Projects under development in Downtown Dallas:
- Dallas CBD Second Light Rail Alignment (D2 Subway) in shaded area
- Dallas Streetcar Central Link
Sustainability Matters

Capital projects minimize environmental impact

For most capital projects, the agency conducts an environmental assessment, which is documented in a report such as an Environmental Impact Statement (EIS). These reports identify both a project’s potential impacts and ways to reduce or eliminate them through mitigation.

The agency looks at a broad range of environmental categories including, but not limited to: land use, air quality, noise, vibration, visual and aesthetic impacts, ecosystems, hazardous materials, cultural resources and parklands.

Currently, DART is finalizing the Cotton Belt Corridor’s EIS. The agency is reinitiating the Preliminary Engineering/Environ...