

SWANA TECHNICAL ASSISTANCE PROGRAM STUDY
CITY OF PITTSBURGH, PENNSYLVANIA
IMPLEMENTATION OF A RECYCLING TRANSFER STATION
JUNE 2009



Submitted by:



"Working to protect the environment since 1939"

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EXECUTIVE SUMMARY

The Pennsylvania Resources Council (PRC) was assigned to work with the City of Pittsburgh's Recycling Division to examine the feasibility of establishing a recycling transfer station to streamline transport of collected recyclables to the processing facility.

The PA Department of Environmental Protection (DEP), the Solid Waste Association of North America (SWANA), the Governor's Center for Local Government Services, and the Pennsylvania State Association of Township Supervisors cooperatively sponsor a Technical Assistance Program for communities seeking to streamline their waste and recycling operations. The City of Pittsburgh, Bureau of Environmental Services, Recycling Division sought and received approval for technical assistance in examining the feasibility of implementing a transfer site for recyclable materials collected in its residential curbside collection and recycling drop-off programs.

The following study and recommendations were generated by the PRC, with input from representatives from the City of Pittsburgh's Bureau of Environmental Services and Recycling Division. For this study, PRC utilized information provided by the City's Recycling Division regarding existing recycling trucks, tonnage and staffing to compare current methods of delivering curbside recyclable materials to the contracted processing facility to the creation and utilization of a transfer facility. This report also examines the costs associated with the establishment of a transfer facility within the City for interim staging of recyclable materials from both the residential curbside collection as well as a residential/commercial drop-off. Detailed conclusions of the findings and recommendations can be found in Section 10.0. In summary, PRC makes the following observations/recommendations regarding transporting curbside residential recyclables in bulk and the creation of a recycling transfer facility:

- Transporting recyclable materials via bulk methods is more efficient from time and cost perspectives.
- The City should consider the creation of a centralized transfer facility.
- The facility should include provisions for handling curbside residential recyclables as well as both residential and small scale commercial drop-off materials.
- The transfer facility should be located within one half mile of the City's current Environmental Services building.
- The City should explore options to purchase and utilize larger capacity trailers to transport recyclables to the processor.
- The City should explore additional transportation options (private haulers, processor provided service, etc.)
- Until a specific site is chosen for the transfer facility it is impossible to accurately determine start-up and operating costs.
- This study provides a range of costs based on current information and research available at the time of completion.

1.0 BACKGROUND INFORMATION

Pittsburgh is a city in and the county seat of Allegheny County, Pennsylvania, United States, and the second largest city in the state. Its population was 334,563 at the 2000 census; by 2006, it was estimated to have fallen to 312,819. The city's Downtown retains substantial economic influence, ranking at 25th in the nation for jobs within the urban core (and is 6th in job density).

The characteristic shape of downtown is a triangular tract carved by the confluence of the Allegheny and Monongahela Rivers, where the Ohio River forms. The skyline features 151 high-rise buildings, 446 bridges, two inclined railways, and a pre-revolutionary fortification. Pittsburgh is known colloquially as "The City of Bridges" and "The Steel City" for its many bridges and former steel manufacturing base.

While the city is historically known for its steel industry, today it is largely based on healthcare, education, technology, robotics, fashion, and financial services. The city has made great strides in redeveloping abandoned industrial sites with new housing, shopping and offices, such as the Southside Works. While Pittsburgh faced economic troubles in the mid 1970s as the steel industry waned, modern Pittsburgh is economically strong. In 2007, *Forbes* magazine named Pittsburgh the 10th cleanest city, and in 2008 *Forbes* listed Pittsburgh as the 13th best city for young professionals to live. The city is consistently ranked high in livability surveys. In 2007, Pittsburgh was named "America's Most Livable City" by *Places Rated Almanac*.

2.0 SCOPE OF WORK

PRC representatives held an initial meeting with Shawn Wagle, Recycling Supervisor, and Leonard Huggins, Program Supervisor. After discussion of the City's objectives, PRC's scope of work was outlined to include the following areas:

- Meeting with the designated City of Pittsburgh representative(s) to gather background information.
- Compiling/reviewing current residential curbside and drop-off tonnage information.
- Comparing current recycling trucking costs/mileage/time to potential costs savings for bulk trucking
- Completion of analysis of existing transportation system and a potentially centrally located facility
- Exploring/identifying potential sites
- Researching site equipment/staffing needs and costs
- Follow-up meetings with City representatives
- Completion of final report

3.0 EXISTING RECYCLING INFRASTRUCTURE

With an estimated 312,819 residents, Pittsburgh is one of 59 municipalities in Allegheny County mandated to recycle by PA Act 101 of 1988. Recycling is mandatory for every resident, business, office and institution in the City of Pittsburgh according to City Code 619.

3.1 Curbside Recycling

In November 1, 2008, the City implemented a single stream residential curbside recycling collection in all divisions where all collectible recycling items, except for corrugated cardboard, can be bundled together in the same blue bag for collection. Residents in all divisions can recycle the following items curbside every other week.

- Newspapers
- Glass Containers
- Plastic (numbers 1, 2, 3, 4, 5)
- Metal Containers (e.g. aluminum, steel, bi-metal cans including empty paint and aerosol cans)
- Magazines, catalogs, paperboard
- White office paper
- Junk mail, hardcover books, phonebooks
- Corrugated cardboard

The City of Pittsburgh utilizes municipal collection crews for the curbside collection of recyclable materials. The crews provide bi-weekly residential curbside recycling pickup to all single-family residents, some multi-family residents and a limited number of non-profit organizations within the City limits. The curbside recyclables are collected via the use of 10 rear load packer trucks of approximately 20 to 24 cubic yard capacity each with a two-man crew. One additional truck is utilized to service the recycling drop-offs for a total of 11 trucks per day. The trucks compact the recyclable material at a ratio of approximately 2 to 1. The City collects approximately 12,000 tons of residential curbside recyclables per year.

3.2 Drop-off Recycling

The City operates a number of drop-off recycling locations for both residential and small businesses that accept the following materials:

All Bottles (Aluminum, Glass, Plastic) & Cans & Plastic Containers 1,2,3,4 & 5
Newspaper
Corrugated Cardboard
Magazines, Catalogs & Paperboard
White Office Paper
Mixed/Colored Paper & Junk Mail
Telephone Books
Yard Debris
Scrap Metal
Scrap Tires

Drop Off Locations

East End Drop-Off Center

(West Homewood/East Liberty) North Dallas Ave. at Hamilton Ave.

Hazelwood Drop-Off Center

Melanchton Ave. off 5200 block of Second Ave.

West End Drop-Off Center

Next to Herschel Field

Strip District Drop-Off Center

Bureau of Environmental Services

30th & Railroad Streets (Open to small businesses, bars and restaurants)

Construction Junction (Point Breeze)

214 N. Lexington Ave. (off Penn Ave.)

3.3 Commercial & Institutional Recycling

The City currently does not offer recycling pick-up for businesses. Businesses are expected to contract with a private hauler or utilize the recycling drop-offs. Businesses or their contracted hauler are required to report the tonnage of material recycled to the City on an annual basis. The one exception is that small businesses are permitted to utilize the Strip District Drop-off location. Institutional recycling is handled on a case-by-case basis. The City collects from some smaller institutions and non-profits, other institutions contract with a private hauler to provide recycling collection.

4.0 BULK TRANSPORT OF RECYCLABLE MATERIALS

This report explores the feasibility of the City of Pittsburgh operating a recycling transfer facility to minimize costs and maximize the efficiency of the delivery of curbside residential recyclables to the contracted processing facility. The concept would be that the City’s current eleven recycling collection vehicles would drop their loads of curbside residential recyclables at a transfer facility located near the City’s Environmental Services Building, the material would then be loaded into 40 yard roll offs for transport to Greenstar, the City’s current contracted processor.

The following tables compare the transportation cost of the current system of each recycling vehicle driving to the processing facility to transporting the material to the processing facility, in bulk, via 40yard roll-off containers. For purposes of this comparison, the mileage figure used in both tables is arrived at using the City’s Environmental Services Building, located at 3001 Railroad Street, Pittsburgh, PA 15201 as the starting point and the Green Star processing facility located at 4100 Grand Ave., Pittsburgh, PA 15225 as the end point. The average workdays per month was arrived at by adding up the workdays for all the entire year and dividing by 12. Fuel costs, hourly rates, trucks per day, tonnage and MPG were supplied by the City.

Average Current Recycling Transportation Costs			
Average work days per month	21.75		
Trucks per day	11		
Fuel (per gallon)	\$3.20		
Average MPG	2.5		
Average tons per day	45.98		
Travel			
One way			
	Distance	11.3 miles	
	Time (approx.)	30 minutes	
Round trip			
	Distance	22.6 miles	
	Time (approx.)	60 minutes	
Dump Time (approx.)		15 minutes	
Wages (per hour)	Refuse Truck Driver	\$18.81	
	Wages	Fuel	Total
Average cost per day	\$ 258.64	\$ 318.21	\$ 576.85
Average cost per month	\$ 5,625.42	\$ 6,921.07	\$ 12,546.49
Average cost per year	\$ 67,505.04	\$ 83,052.81	\$ 150,557.85

Projected Average Bulk Transportation Costs			
Average work days per month	21.75		
Trucks per day	4		
Fuel	\$3.20 gal		
Average MPG	3.5		
Average Tons per day	45.98		
Travel			
One way			
	Distance	11.3 miles	
	Time	30 minutes (approx.)	
Round trip			
	Distance	22.6 miles	
	Time	60 minutes (approx)	
Dump time		30 minutes (approx.)	
Wages	Refuse Driver	\$18.81hr	
	Wages	Fuel	Total
Average cost per day	\$ 112.86	\$ 82.65	\$ 195.51
Average cost per month	\$ 2,454.71	\$ 1,797.64	\$ 4,252.35
Average cost per year	\$ 29,456.52	\$ 21,571.68	\$ 51,028.20

Cost Comparison			
	Wages	Fuel	Total
Average cost per day			
Current	\$ 258.64	\$ 318.21	\$ 576.85
Bulk	\$ 112.86	\$ 82.65	\$ 195.51
Average cost per month			
Current	\$ 5,625.42	\$ 6,921.07	\$ 12,546.49
Bulk	\$ 2,454.71	\$ 1,797.64	\$ 4,252.35
Average cost per year			
Current	\$ 67,505.04	\$ 83,052.81	\$ 150,557.85
Bulk	\$ 29,456.52	\$ 21,571.68	\$ 51,028.20

Recommendations:

According to the calculations contained in the tables above the City could see a significant cost savings by transporting the recyclables collected from the curbside residential program via a bulk transportation system. Based on just this information alone, it is recommended that the City should pursue the option of transporting its residential curbside recyclables via bulk transportation.

Additional recommendations/observations:

- Explore the use of larger bulk transport vehicles (i.e. 53 ft walking trailers).
- Explore the use of contracted hauling services (i.e. private hauler, processor, etc.)
- Explore equipment leasing options.
- To maximize cost effectiveness the transfer facility should be located within a one half mile range of the Environmental Services Building.

5.0 CREATION OF A CITY OPERATED TRANSFER FACILITY

In order to take advantage of the use of bulk transportation of curbside recyclable materials the City will need to create a transfer facility to serve as the intermediate location for the weighing, drop-off and bulking of recyclable materials collected from its curbside program. This location ideally should be in close proximity to its existing Environmental Services Building located at 3001 Railroad Street, Pittsburgh, PA 15201.

To begin the process of exploring options for the logistics of establishing a recycling transfer facility the City looked at an available location directly across the street from the current Environmental Services Building (see lease proposal in appendix A). The proposed property is located at 32nd Street and Spruce Way, Pittsburgh, PA 15201. While no formal agreement currently exists as of the writing of this study between the City of Pittsburgh and the owners of the property known as The Mill @ 32nd Street, this location was utilized in order to establish a baseline estimate of start-up and operating costs. As outlined in the table below a high/low range for rent, utilities, improvements and misc. supplies was created utilizing the Mill @ 32nd Street as the low cost estimate and an average of other sites in close proximity to estimate the high range.

Projected Transfer Facility Costs Start-up		
Item	Low	High
Rent	\$ 2.50\sq ft	\$ 6.50\sq ft
Security Deposit (1 month's rent)	\$ 5,000.00	\$ 13,542.00
Scale	\$ 30,000.00	\$ 80,000.00
Misc Supplies	\$ 15,000.00	\$ 30,000.00
Building Improvements	\$ 50,000.00	\$ 150,000.00
Sub Total	\$ 100,000.00	\$ 273,542.00
Front End/Wheel Loader		
New	\$ 69,500.00	\$ 270,000.00
Used	\$ 35,000.00	\$ 85,000.00
Total	\$ 169,500.00 (New) \$ 135,000.00 (Used)	\$ 543,542.00 (New) \$ 358,542.00 (Used)

The Return on Investment (ROI) for the capital outlay associated with the start-up of the transfer facility based on the bulk transportation savings is approximately 1.7 years (new)/ 1.3 years (used) on the low side or 5.46 years (new)/ 3.60 years (used) on the high side. These timeframes were calculated utilizing an annual cost savings from bulk transportation of recyclables of \$99,529.65. Once the original ROI is achieved, the annual savings realized via the implementation of bulk transportation could be applied to offset part of the ongoing annual operating costs of the transfer facility.

To determine basic operating costs the table below provides a high/low range based on rent, utilities and staffing. Additional costs including insurance, maintenance, repairs, supplies, etc. would be in addition to the basic operating costs below and could only be accurately determined once a specific location is selected.

Basic Operating Costs					
		Month		Year	
		Low	High	Low	High
Rent		\$2.50\sq ft	\$6.50\sq ft	\$2.50\sq ft	\$6.50\sq ft
		\$5,000.00	\$13,542.00	\$ 60,000.00	\$ 162,500.00
Utilities		\$1,000.00	\$ 1,500.00	\$ 12,000.00	\$ 18,000.00
Heavy Equipment Operator	\$19.90 per hr	\$3,449.33	\$ 3,449.33	\$ 41,392.00	\$ 41,392.00
Laborer	\$18.37 per hr	\$3,184.13	\$ 3,184.13	\$ 38,209.60	\$ 38,209.60
Driver/Operator	\$18.81 per hr	\$3,260.40	\$ 3,260.40	\$ 39,124.80	\$ 39,124.80
Total		\$15,893.86	\$24,935.86	\$ 190,726.40	\$ 299,226.40

6.0 FINAL RECOMMENDATIONS

After careful consideration of the information gathered for this study the following recommendations are being presented for consideration.

The City should:

- Identify/solidify long range plans for the current ES location before entering into any long term leases or incurring excessive capital outlays for a transfer facility.
- Proceed to the next level with plans to bulk curbside recyclables for transportation to the recycling processor.
- Explore the purchase and/or lease of higher capacity vehicles(s) to transport recyclables in bulk.
- Explore options for utilizing contracted hauling services for the bulk transportation.
- Explore other potential transfer facility locations in addition to the Mill @ 32nd Street site.

City of Pittsburgh – SWANA Recycling Technical Assistance Program 2009

- Pursue the potential leasing of the existing Greenstar transfer station at 26th and Smallman Streets.
- Solicit written estimates for specific needed upgrades/improvements to the Mill @ 32nd site. Required site improvements and updates may make the site cost prohibitive.
- Maximize the efficiency and effectiveness of the transfer facility by offering additional drop-off services (residential, commercial, yard waste, etc.).

PRC's recommendation is that the City should continue to explore the option of creating and operating a transfer facility if the cost of operating such a facility does not exceed the difference between the current transportation costs and the projected bulk transportation cost.

**APPENDIX A:
LEASE AGREEMENT MILL @ 32ND STREET**



OLANDER FAMILY IRREVOCABLE TRUST
243 Morewood Avenue ■ Pittsburgh, PA 15213 ■ (412) 683-6200
Fax ■ (412) 683-5411

LEASE PROPOSAL

DATE: March 3, 2009

TENANT: City of Pittsburgh
Department of Public Works
Recycling Division
3001 Railroad Street
Pittsburgh, PA 15201

LOCATION: The Mill @ 32nd Street
32nd Street at Spruce Way
Pittsburgh, PA 15201

SIZE: An existing open-sided building approximately 24,480 square feet in size and a surface lot adjacent to the building that runs the length of the property from 31st to 32nd Streets. The building is of clear span construction with 36' ceiling heights.

OCCUPANCY DATE: To be negotiated

TERM: Five (5) years.

RENTAL RATE: \$60,000.00 annually (\$5,000.00/month)

UTILITIES: The Tenant is responsible for all utility usage in the Demised Premises.

PROPERTY TAXES: Responsibility of Tenant.

PROPERTY INSURANCE: Responsibility of Tenant.

SECURITY DEPOSIT: Landlord shall require a security deposit equal to one (1) month's rent.

**REPAIRS AND
MAINTENANCE:**

Tenant is responsible for all repairs and maintenance required in the Demised Premises.

IMPROVEMENTS:

Landlord shall provide, at Landlord's cost, the labor and materials required clean out the debris located in the building and on the adjacent surface lot. Tenant shall perform, at its sole expense, the installation of any electrical service required in the Demised Premises. Tenant shall also be responsible for securing the Entire Premises with any permanent fencing it deems necessary.

SIGNAGE:

Landlord shall permit Tenant to install signage on exterior of the building provided Landlord reviews proposed signage prior to installation.

**BROKER
COMMISSION:**

Landlord and Tenant agree that there is no broker involved in this relationship and no broker commission will be paid in the event a Lease agreement is executed.

LEASE FORM:

To be provided for your review upon request.

The above Proposal is effective for a fifteen (15) day period from the date contained hereinabove.

**APPENDIX B:
EXAMPLES OF OTHER AVAILABLE PROPERTIES**



2735 Railroad Street

Property ID: 16256431

<http://listing.loopnet.com/16256431>

2735 Railroad Street
 2735 Railroad Street
 Pittsburgh, PA 15222
 County: Allegheny

For more details about this listing

Inquire About This Listing



For Lease	Active
Type:	Industrial Flex Space
Total Space Available:	7,507 SF
Building Size:	22,784 SF
Date Last Verified:	5/29/2009
Property ID:	16256431

Available Spaces

Suite/ Floor	Space Available	Minimum Divisible	Maximum Contiguous	Rental Rate	Date Available	Space Type	Sublease
Space 1	7,507 SF	N/A	N/A	\$7.95/SF/Year	Immediate	Flex Space	No

Lease Type: NNN

Additional Photos





Additional Information

Property Description:

Renovated warehouse and new construction office
Well maintained mechanicals and utilities
Fully sprinklered building
15,277 SF warehouse space
18' clear ceilings and new gas heaters
2 drive in dock bays able to accommodate 48' trailer internally and 1 dock door
7,507 SF office
1st Floor: 4,709 SF
Mezzanine: 2,798 SF
Ample Parking

** Also available for SALE!

Location Description:

Prime owner occupant renovated Flex property in the Strip District



5/29/2009

Link directly to this listing or embed it on your website! [More Details](#) Link <http://listing.loopnet.com/16256431>

Embed

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[Print](#) [Window](#) [Close Window](#)

403 Bingham Street

Property ID: 16152516

<http://listing.loopnet.com/16152516>

403 Bingham Street
Pittsburgh, PA 15203
County: Allegheny



CONTACT LISTING BROKER

Edie Hartman (412) 391-2602

Grant Street Associates



| | |
|------------------------|----------------------|
| For Lease | Active |
| Type: | Industrial Warehouse |
| Total Space Available: | 53,000 SF |
| Building Size: | 80,000 SF |
| Date Last Verified: | 4/29/2009 |
| Property ID: | 16152516 |

Available Spaces

| Suite/
Floor | Space
Available | Minimum
Divisible | Maximum
Contiguous | Rental
Rate | Date
Available | Space Type | Sublease |
|-----------------|--------------------|----------------------|-----------------------|----------------|-------------------|------------|----------|
| Space 1 | 53,000 SF | N/A | N/A | \$5.00/SF/Year | Immediate | Warehouse | No |

Lease Type: Industrial Gross

Additional Information

Property Description:
80,000 SF Class C Warehouse Building

Location Description:
This space was remodeled about ten years ago and is modern in most respects, including a dropped ceiling on a 4x8 grid, 30' high. New lighting, good heat.



3/18/2009

Link directly to this listing or embed it on your website! [More Details](http://listing.loopnet.com/16152516) Link <http://listing.loopnet.com/16152516>

Embed

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**APPENDIX C:
COMPARISON OF FRONT END/WHEEL LOADERS**



Front End/Wheel Loader

Comparison

| Manufacturer | Model | Price |
|--------------|--------|-----------|
| Titan | CG938G | \$69,500 |
| Caterpillar | 930 H | \$140,000 |
| John Deere | 544 | \$137,000 |
| Titan | CG950G | \$109,500 |
| Caterpillar | 950H | \$220,000 |
| John Deere | 644 | \$210,000 |

| Manufacture | Model | Rated Horsepower | Bucket Capacity | Clearance |
|-------------|---------|------------------|-----------------|-----------|
| Titan | CG938G | 155 | 2.60 yd3 | 9 ft |
| Caterpillar | 924 G | 129 | 2.35 yd3 | 9.57 ft |
| John Deere | 444J | 119 | 2.35 yd3 | 8 ft |
| Komatsu | WA200PT | 120 | 2.50 yd3 | 9'2" |
| Titan | CG958G | 210 | 4 yd3 | 9.83 ft |
| Caterpillar | 950H | 197 | 4 yd3 | 9.59 ft |
| John Deere | 724J | 215 | 4.75 yd3 | 9 ft |
| Komatsu | WA430 | 231 | 4.1 yd3 | n/a |

**APPENDIX D:
EXAMPLES OF SCALES**



FAIRBANKS[®]

MATRIX SERIES CONFIGURABLE TRUCK WEIGHING SYSTEM



Fairbanks' Matrix truck weighing system challenges conventional truck scale design with its revolutionary modular approach to obtaining legal-for-trade vehicle weights in low-volume weighing applications.

UNIQUE SCALE CONCEPT FEATURES COST-SAVING DESIGN

Is it always necessary to buy a full-length truck scale when the axles and tires of most highway vehicles require only 20 to 25 feet of total scale length?

Until now, the only option was a full-length scale. Thanks to the Matrix, many truck scale operations now have a choice.

The Matrix is a new configurable truck weighing system that reduces cost by utilizing steel scale platforms only under each set of truck scale axles and incorporating concrete modules (dead spans) between scale platforms. The ultra-low-profile Matrix is designed for installation on a level, unyielding surface, thereby eliminating cost associated with building a foundation or pit.

MATRIX FEATURES

- **Ultra-low 6" profile.**
- **Foundation not necessary for most installations.**
- **Can be configured to weigh most highway vehicles.**
- **Single day installation — Easy to move/relocate.**
- **Acquires legal gross weight and individual axle weights.**
- **Typically requires less real estate than full-length scale.**

BUILD THE MATRIX YOUR WAY

Matrix steel platforms are 10 feet wide and come in standard lengths of 7, 10, 14, 17 and 20 feet. Configuring multiple platforms with variable length, steel-framed concrete dead span modules allow the system to be customized to fit a broad range of loading scenarios.

WIDE RANGE OF APPLICATIONS

The Matrix is right for truck scale applications with anticipated daily weighments of 50 trucks or less. Here are a few examples of industries and applications that could benefit from the savings, convenience and flexibility of a Matrix system:

- **Moving and shipping**
- **Warehouse facilities**
- **Filling operations**
- **Light manufacturing**
- **Equipment weighing**
- **Manufacturing operations**
- **Service companies**

SPECIFICATIONS

Weighing platforms:

Standard width 10 feet
Standard lengths 7, 10, 14, 17, and 20 feet configurable
with dead span modules to achieve
desired weighing system length

Capacities 60 ton to 135 ton
CLC 60K and 80K
Design Orthotropic, open bottom
Construction Structural steel
Approvals NTEP CC No. 07-069

Dead span Modules:

Construction Composite concrete
Frame Structural steel and Nelson studs
Required fabrication Field pour concrete

Load cell data:

Capacity 50,000 lbs
Type Rocker column
Material Stainless steel, 17-4 PH (1.458)
Protection Complete hermetic sealing
Resistance 1,000 ohms
Output 2.0 mV/V
Approvals NTEP CC No. 97-078; Factory Mutual

Accessories Ramps, remote displays, indicators,
traffic signals, unattended terminals

QuickFacts[™]

Models and specifications subject to change without notice.
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Call toll-free for the Fairbanks representative nearest you:

(800) 451-4107

Internet Address: <http://www.Fairbanks.com>

FAIRBANKS[®]

TALON HV SERIES PORTABLE VEHICLE SCALE



Designed to the highest standards in the industry, Fairbanks' Talon HV Portable Vehicle Scale outperforms all contenders across the board, setting a new standard for the truck scale industry.

BUILT TO PERFORM, ENGINEERED TO LAST

Talon HV Portable Vehicle scales are constructed with multiple 10" and 12" Structural Steel I-beams. These massive supports, coupled with the highest deflection rating on the market, produce an extremely rigid and durable portable weighbridge.

APPLICATIONS

- Asphalt plants
- Landfills
- Dairy farms
- Aggregate yards
- Timber Mills
- Farmer's markets
- Coal mines
- Ports of entry
- Grain plants
- Concrete plants
- Transfer stations
- Transportation Ops

FEATURES

- Up to 300,000 pound gross capacity, 90,000 pound CLC/DTAC.
- Stainless steel, hermetically sealed load cells, NEMA 6P (IP68) rated.
- Deflection less than 1/1100 under legal highway loads.
- Intalogix[®] Technology comes standard for ultimate lightning protection.
- ⋮ Quick, easy installation.
- Field-proven scale ventilation design prevents water corrosion/collection.
- Backed by optional 5 Year Warranty.

SPECIFICATIONS

- Deck Dimensions Lengths: 60', 70', 80'
Width: 10'
- CLC/DTAC 90K
- Gross Capacities 240K to 300K
- Sections 4 to 5
- Modules 3 to 4
- Module Data:
 - Module Design Orthotropic
 - Module Construction USA Structural Steel
 - Module Under Structure Open Bottom
- Deck Plate Thickness 1/4"
- Options Deck runners, Rub Rails, 120K CLC,
100K Load Cells, 300K Gross Capacity,
Custom Widths/Lengths, Drop Plates,
Blow Down Plates
- Accessories Weight Indicators, Report & Ticket Printers,
Unattended Automated Systems, Custom
Software, Traffic Signals, Remote Displays
- Approval NTEP COC #96-089A3
- Load cell:
 - Height 5.5"
 - Capacity 66K
 - Type Rocker Column
 - Sealing Complete hermetic sealing; cable entry
sealed by glass-to-metal header
 - Material Stainless Steel
17-4 PH (1.4548)
 - Rating IP68 (NEMA 6P)
 - Resistance 1,000 Ohms
 - Operating Temperature -40...+80°C (-40...176°F)
 - Output 2.0 mv/v
 - Combined Error <=0.02%
 - Zero Balance (FSO) 1.0%
 - Excitation 5 to 15 VDC
 - Ultimate Overload 300%
 - Cable length 15'
 - Cable Protection Stainless Steel Sheathing
 - Approvals NTEP COC# 97-078;
Factory Mutual Approved

QuickFacts[™]

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Call toll-free for the Fairbanks representative nearest you:
(800) 451-4107

Internet Address: <http://www.Fairbanks.com>

FAIRBANKS[®]

"TYPE S" SERIES PIT-TYPE TRUCK SCALES



Fairbanks' "Type S" Series Pit-Type Truck Scales are able to deliver accurate, dependable results under the harshest conditions or heaviest loads. The durable design means longer scale life with less maintenance.

DURABLE "TYPE S" DESIGN

With titanium added for extra strength, the "Type S" design means enhanced endurance over the long-life of these scales. The "Type S" weighbridge is built to withstand the punishment of heavy loads without ever compromising accuracy or reliable weighing results.

RUGGED, DEPENDABLE SCALES

Fairbanks offers a wide range of truck scales to meet a variety of weighing needs. Capacities range from 15 to 120 tons. If a full length truck scale is not required or real estate is limited, then the axle load models in this series will provide an ideal solution.

PARALLEL LINK SUSPENSION

Fairbanks' parallel link suspension allows the load pivots and bearings to run parallel to the direction of the traffic on "Type S" scales. This design dramatically reduces pivot and bearing wear, and protecting against the side load shocks caused by truck traffic stopping and starting on the scale. The parallel link suspension design also reduces critical component wear while ensuring longer, more dependable scale life.

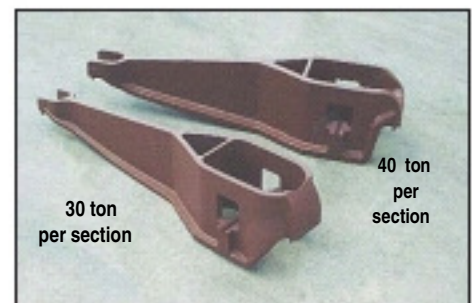
VERTICAL ADJUSTMENT

The adjustable trunnion bolts on all the "Type S" Series Pit-Type Truck Scales allow you to maintain the scale platform at the proper level in relation to the pit walls. Alignment to the approach ramp is easily adjusted, ensuring a smooth, even approach. The vertical adjustment capability prevents potentially damaging shocks caused by a truck hitting an uneven platform.

DOUBLE WEB LEVERS

Each of Fairbanks' "Type S" Series truck scales are equipped with a durable, cast iron lever system that provides strength and resistance to bending that no fabricated steel lever can match.

The double web lever system keeps the load transmission on the true centerline of the lever, so you are able to achieve accurate, repeatable weighing results every time. The lever's greater surface area also adds strength and rigidity, without increasing weight. Plus, the cast iron resists rust and maintains its structural strength for decades.



Our cast iron levers (above) provide the strength and resistance to bending and torsion that no fabricated lever can.

PRECISION PIVOTS AND BEARINGS

Made of high carbon steel and heat-treated for extra strength, the precision pivots are supported over their entire length by self-aligning bearings. This dependable design helps eliminate stress, while prolonging truck scale life. Easy access to all pivots and bearings permits quick replacement when scale maintenance is required to maintain scale accuracy.

FAIRBANKS' "TYPE S" ARE THE ONLY HEAVY CAPACITY MECHANICAL SCALES USED IN GOVERNMENT LABS BY THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY.

QuickFacts™

Models and specifications subject to change without notice.
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"TYPE S" SERIES PIT-TYPE TRUCK SCALES

"TYPE S" SERIES TRUCK SCALES:

| Platform Size | Scale Capacity | Dual Tandem Axle Capacity | # of Sections |
|-------------------|----------------|---------------------------|---------------|
| 22' x 9' | 15 tons | 30,000 lbs | 2 |
| 24' x 10'/12' | 25 tons | 50,000 lbs | 2 |
| 24' x 10'/12' | 30 tons | 60,000 lbs | 2 |
| 30' x 10'/12' | 30 tons | 60,000 lbs | 2 |
| 34' x 10'/12' | 30 tons | 60,000 lbs | 2 |
| 34' x 10'/12' | 50 tons | 60,000 lbs | 4 |
| 50' x 10'/12' | 60 tons | 60,000 lbs | 4 |
| 60' x 10'/12' | 60 tons | 60,000 lbs | 4 |
| 70' x 10'/12'/14' | 60 tons | 60,000 lbs | 5 |
| 80' x 10'/12' | 60 tons | 60,000 lbs | 5 |
| 50' x 10'/12' | 60 tons | 80,000 lbs | 4 |
| 60' x 10'/12' | 60 tons | 80,000 lbs | 4 |
| 70' x 10'/12' | 60 tons | 80,000 lbs | 5 |
| 60' x 10'/12' | 80 tons | 80,000 lbs | 4 |
| 70' x 10'/12'/14' | 80 tons | 80,000 lbs | 5 |
| 80' x 10'/12'/14' | 80 tons | 80,000 lbs | 5 |
| 60' x 12' | 120 tons | 120,000 lbs | 4 |
| 70' x 12' | 120 tons | 120,000 lbs | 5 |
| 60' x 14' | 120 tons | 120,000 lbs | 4 |
| 70' x 14' | 120 tons | 120,000 lbs | 5 |

NTEP CC#..... 88-154

"TYPE S" SERIES AXLE LOAD TRUCK SCALES:

| Platform Size | Scale Capacity | Dual Tandem Axle Capacity |
|---------------|----------------|---------------------------|
| 8' x 10' | 20 tons | 40,000 lbs |
| 10' x 10' | 20 tons | 40,000 lbs |
| 10' x 10' | 30 tons | 60,000 lbs |
| 12' x 10' | 30 tons | 60,000 lbs |

NTEP CC#..... 88-167



Options now available through Fairlease!

"TYPE S" TRUCK SCALE ACCESSORIES:



Remote Terminal - With touch-screen operation, keypad and optional printer, card reader and wireless ethernet.



Indicators - Fairbanks offers a broad selection, from basic models and configurations to full database integration. See Fairbanks' latest engineering wonder, an indicator that performs like a PC, at www.FB3000.com.



Remote Weight Display - Available in numeric sizes of 1.5" and 5.5".

Ticket Printers - Whether you need to print labels, carbon copy forms or dot-matrix pages, Fairbanks has many printer models from which to choose.

Rub Rails - Designed to help guide trucks on and off the scale.

Load Cell Riser Plate - Eliminates time and cost required for elevated piers.

Standard Traffic Light - Omnidirectional light also available.

GUARANTEED QUALITY — ASSURED BY A 15 YEAR WARRANTY

Fairbanks has provided customers with "Type S" scales since the early 1900s. Our confidence in this product is demonstrated by a 15 Year Warranty offered on all Endurocast Levers with titanium. You can depend on Fairbanks' "Type S" truck scales to outlast your expectations. *Reference warranty statement 101855 for details.*





Scale-Mart Corp.

2829 Lynx Trail Gulf Breeze, FL 32563

850 916-7399 — www.scale-mart.com

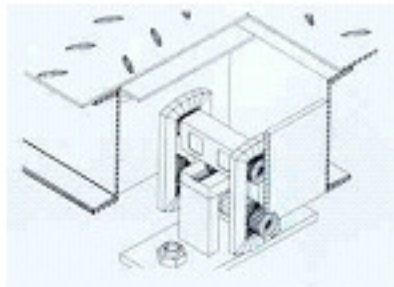


**30' X 10' - 80 Ton Steel Deck Truck Scale (Two modules of the three shown)
Model AMD-1030-2-80-FD3**

Active scales come standard with a limited two year warranty on the weigh-deck and all components. Extended warranties are available.

Unlike most competitors' scales, the Modu-Deck contains NO proprietary technology or components, which trap you into one source, and highest cost for parts and labor. With the Modu-Deck you have the freedom to choose any competitive, qualified, service organization to provide parts and labor for calibration and maintenance during the entire life of the scale.

This cutaway view of the Modu-Deck weighbridge shows how the load cell and mount are totally encapsulated within the weighbridge.



Most other modular design scales mount the load cells, cabling and summing boxes in a confined space between adjoining modules, creating a severe maintenance problem. Only Marginal protection is provided by a removable plate running the width of the scale. This space becomes a collecting place for mud, snow, ice and deck run-off, which often contains corrosive chemicals resulting in premature failure of the load cells, load cell mounts and summing network.

The Modu-Deck encapsulated design virtually eliminates all of these problems by creating a protected clean area for the load cell and pier area below it.

All Active Scales are N.T.E.P. approved as well as type approved for use in trade in Canada.

- 80 Ton Gross Capacity

40 Ton Dual Tandem Axle Capacity (CLC)

- Scale Modules Utilize 10" structural steel
- Load Cells - 75K Nickel Plated for corrosion Resistance (Ger
- All Load Cell cables are Stainless Steel Sheathed and enclosed in metal conduit
- Checking System utilizes end bumper bolts for friction free quick settling

• **Scale Only (30' X 10')----- \$15,495.00**

• **FOB: Brantford, Ontario**



• **M-2000 Digital Readout in SS Case**

• **Features:**

- Units conversion: lbs/kg
- Zero Tracking: 1-99% of d or 1,2,3d
- Resolution: +/- 52000 A/D internal counts
- Sampling rate: 100 times a second per channel
- Span stability: 2ppm/deg C
- Zero Stability: 5nV/deg C
- Linearity correction: 10 span entries
- Calibration Method: calibration through software stored in flash memory
- Calibration Sealing: physical seal or Class1 Audit Trail system, password protected
- Tare: Keyboard and scale tare, multiple tare id's can be stored in memory
- Time and Date: Y2K compliant time/date clock, internal battery backup
- Truck Database: capable of storing 150 truck id's with associated tare weights
- Truck In/Out Loop: truck in/out loop program for weigh in/ weigh out applications
- Ticket Editor: create custom tickets for serial printers. Indicator can store and recall different tickets.
- Power On: selectable on/off switch
- Loadcell Input:
- Full Scale: 4 ranges 0-9mV, 0-19mV, 0-39mV, 0-79mV
- Excitation: 7.5VDC, 16x350 ohm, 32x700 ohm all three channels combined

• **Communications:**

- Analog Output: optional 4-20mA board via Smart Wire
- Serial Output: 2 full duplex RS232/RS422 ports
- IO Interface: periferal expansion through Smart Wire multi drop RS485 port
- External IO: up to 6 channel setpoint via Smart Wire
- Baud Rate: 150-32,400 bps, selectable

- Display:
 - Size: 6 digit, 7 segment 1" red LED
 - Filtering: Fast Step quick response algorithm adjustable filter
 - Modes: display from CH1, CH2, CH3, and total of all channels in not legal for trade sites

Electrical:

- Power Requirements: 12VDC 1A
- Temperature Range: -45 deg C to + 45deg C
- Setpoints: 6 programmable setpoints per channel
- Sense Amplifier: differential amplifier with 4 and 6 wire
- RFI Protection: filtered signal, excitation and sense lines

Approvals:

- Canada: Class III/IIHD 10000
- USA: NTEP Class III/IIII 10000
- OIML: Pending

General Features:

- Plug and Play using standard RS232 communication.
- Logfile generation for storage of weight data
- User definable ID tags for weight samples
- Continuous weight display with adjustable time increments
- Display of all three channels simultaneously with total
- Tare / Zero each channel individually
- Printing capabilities
- Simple user interface
- Port Scanner for discovery of valid comm ports
- Will work with any WS indicator capable using DF2500 command mode 6

\$575.00

Optional TMU-295 Ticket Printer

\$425.00

Total Equipment Only (30' X 10')----- \$16,495.00

Foundation

Foundation requirements vary by state, but generally speaking will require a foundation of piers or slab with 10' level approaches on each end. These approaches must be of concrete. Sloping approaches should be 25' long and should be of a "Suitably Hard Material".

Foundation drawings for permanent installations will be provided in a timely manner upon request. They are also found on this web site... under "Foundation Drawings". All foundation work is the responsibility of the customer.

Does not include:

Lifting Equipment
Any Permits

Any state or local taxes
Scale House
Electrical service
Conduit other than provided in scale
Load cell cable over 50'
Any foundation work

Installation Supervision provided for \$1,500.00 to \$3,000.00 in Continental
USA, and \$3,000.00 and up International. (including expenses)

Availability Two to Three Weeks
