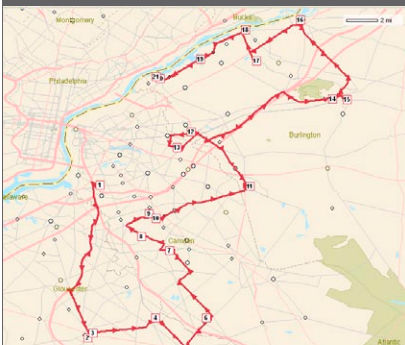




# Metropolitan Area Neighborhood Nutrition Alliance

## ArcLogistics™ Helps Streamline Meal Delivery Service

### CASE STUDY



#### CHALLENGE

Creating full workday schedules for MANNA drivers and part-time schedules for volunteers had become burdensome.

MANNA staff wanted to easily provide the full-time drivers with enough work for eight hours while keeping overtime in check.

#### RESULTS

- Reduced the number of daily routes
- Reduced fuel consumption
- Produced accurate drive times
- Improved arrival-time estimates

*"Before ArcLogistics, we had seven drivers who spent 30 to 35 hours each week on the road. Today, we are doing the same number of deliveries with two fewer drivers in approximately 30 hours."*

*Alisha Simons*

*Director of Quality Assurance and Logistics  
MANNA*

Metropolitan Area Neighborhood Nutrition Alliance (MANNA), a nonprofit organization in Philadelphia, Pennsylvania, operates with a small professional staff and over 1,000 dedicated volunteers who prepare and deliver more than 56,000 fresh, nutritious meals each month to families living with a life-threatening illness.

MANNA recently reengineered its entire delivery process to increase service capacity and improve the efficiency of its meal delivery operations.

### The Challenge

Creating full workday schedules for MANNA drivers and part-time schedules for volunteers had become increasingly burdensome. The system did not allow MANNA staff to easily provide the full-time drivers with enough work for eight hours while keeping overtime in check.

MANNA staff wanted to streamline the delivery system to improve the efficiency of meal delivery operations.

The meal delivery fleet is composed of five full-time meal delivery vehicles and approximately 5 to 15 part-time volunteers driving their own vehicles. Staff used a variety of consumer-grade mapping tools to craft preset delivery zones for the drivers. Although this strategy proved to be a good way to arrange meals by zone each morning, the group couldn't manually adjust fluctuating daily zone volumes, which changed due to cancellations, new clients, and special or missed deliveries. Holidays also played havoc with volumes and delivery schedules. For example, although MANNA usually delivers to nearly 200 clients a day, the organization delivered more than 1,600 meals for Thanksgiving 2008 with help from 120 extra volunteers. Besides improving driver productivity, MANNA staff also wanted to reduce miles driven and fuel consumption.

**Route Manifest**

Vehicle: 06      Print Date/Time: 3/6/2009 3:31:45PM  
 Driver: Ron      Routing Folder: 7/18/2008

Start at 4930 Shepherd St.  
 Go north on Edgemoor Ln toward Susan Ln, drive < 0.1 Miles  
 Turn right on Arlington Ave, drive < 0.1 Miles  
 Turn left on Tangle Blvd, drive 0.3 Miles  
 Turn left on SR 352 (Edgmont Ave), drive 0.2 Miles  
 Turn right on E Brookhewen Rd, drive 2.1 Miles  
 Turn left on SR 252 (S Providence Rd), drive 0.2 Miles  
 Turn left on Single Ln, drive < 0.1 Miles  
 Finish at «Unnamed», on the left

Customer	Address	Time	Order
Delivery: 108991	Wallingford, PA, 19086	ETA 10:10:59 AM	# 999999
HM		TW 1	WT 0
WK		TW 2	VL 1
		SRVC 5 0	CT 0
			CT2 0

CUST. SIGN \_\_\_\_\_

**Route Manifest**

Vehicle: 01      Print Date/Time: 3/6/2009 1:33:25PM  
 Driver: John      Routing Folder: 7/18/2008

**Dispatcher Summary**

Print Date/Time: 3/6/2009 3:32:51PM

Driver/Volunteer	Miles	Est. Miles	Est. Hours	Est. Minutes	Est. Seconds	Est. Total	Est. Fuel	Est. Cost
01 John	48	8104.82	0:00	0:00	0:00	0:00	0.00	0.00
02 Ron	38	8114.26	0:00	0:00	0:00	0:00	0.00	0.00
03 Ron	48	8147.72	0:00	0:00	0:00	0:00	0.00	0.00
04 Ron	37	8109.76	0:00	0:00	0:00	0:00	0.00	0.00
05 John	47	8112.84	0:00	0:00	0:00	0:00	0.00	0.00
06 Ron	39	8119.23	0:00	0:00	0:00	0:00	0.00	0.00
07 Ron	7	8103.02	0:00	0:00	0:00	0:00	0.00	0.00
08 Ron	3	8103.08	0:00	0:00	0:00	0:00	0.00	0.00
09 Ron	4	8103.41	0:00	0:00	0:00	0:00	0.00	0.00
10 Ron	4	8103.17	0:00	0:00	0:00	0:00	0.00	0.00
11 Ron	5	8103.89	0:00	0:00	0:00	0:00	0.00	0.00
12 Ron	3	8103.67	0:00	0:00	0:00	0:00	0.00	0.00
13 Ron	3	8104.81	0:00	0:00	0:00	0:00	0.00	0.00
Total	287	81200.92	0:00	0:00	0:00	0:00	0.00	0.00

MANNA can use ArcLogistics to quickly create route manifests with simple driving directions.

# Metropolitan Area Neighborhood Nutrition Alliance

## ESRI SOFTWARE USED

ArcLogistics

## DATA USED

Tele Atlas

## The Solution

After investing in new, larger-capacity delivery trucks, MANNA was able to switch from making daily client deliveries to delivering once a week. Staff also wanted to drop fixed zone assignments and create daily routes for the full-time drivers and enough of the volunteers to comply with the schedule.

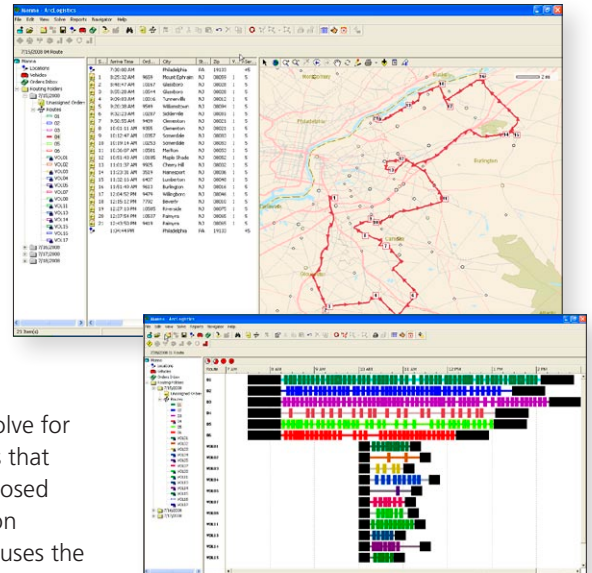
After a demonstration of ArcLogistics™ software, the MANNA team determined that ArcLogistics could help them build accurate routes quickly and dynamically. ArcLogistics approaches routing and scheduling problems based on multiple factors such as the nature of the street network, business rules, customer time windows, vehicle capacities, and driver specialties. As a result, the route planner is able to solve for the optimum route based on factors that reflect real-world conditions, as opposed to simply drawing up routes based on “crow-fly” estimates. MANNA now uses the sophisticated solvers in ArcLogistics, along with street network data from Tele Atlas®, to build realistic driving routes.

To implement the software, ESRI worked with MANNA staff to outline a new routing process, develop a data model, and premodel various routing scenarios. Upon completion of that initial work, the company finished the installation, setup, testing, and end-user training in less than two weeks.

## The Results

MANNA streamlined its meal delivery service by using ArcLogistics to establish a repeatable process for creating routes, resulting in less variation in routing objectives and standards from one day to the next.

“Since implementing the routing system, we have seen not only a reduction in the number of routes needed each day but also a drop in mileage and fuel consumption. ArcLogistics has also enabled us to derive realistic drive times and provide improved [arrival-time] estimates for our clients,” says Alisha Simons, director of quality assurance and logistics, MANNA.



*Thanks to time windows in ArcLogistics, MANNA can occupy full-time drivers with efficient workdays and evenly distribute remaining orders to volunteer drivers.*

## FOR MORE INFORMATION



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