

# A Water Conversion Case Study

## Nashville International Airport, BNA Nashville, TN

***“The AquaMyzer was very easy for our staff to install. The immediate savings were obvious and to date, we have never had the slightest problem with performance.”***

### **Description:**

Nashville International Airport was constructed in the late 1930's as a *Works Progress Administration* (WPA) project and initially named Berry Field, in honor of Colonel Harry S. Berry, who was then the State Administrator of the WPA. Today, the Airport's 3-letter identifier, **BNA**, stands for Berry Field Nashville.

The Airport is presently served by 17 airlines that move over 9,000,000 passengers a year through the facility. The 820,000 square foot terminal complex employs over 250 employees and is responsible for contributing over \$2.3 billion annually to Nashville's regional economy.

### **Goals:**

Like most of the United States, the residents of the Nashville Area have felt the pressure of increasing water/sewer costs. Rates in

the area have more than doubled within the last five years. The Metropolitan Nashville Airport Authority (MNA), in an effort to reduce these costs, had seriously considered changing out over 300 toilets and urinals on the premises, but facility management was very concerned about the effects the reduce water flow might have on some of the older waste lines within the facility.

Retrofitting the existing fixtures with the AquaMyzer kit from Del Mar Lighting offered a workable and cost-saving alternative. The initial tests done with samples of the product showed that they could save a significant amount of water without affecting the functionality of the fixtures, meaning that the reduced water flow through the system would be of little concern.

### **Solutions:**

In order to evaluate the finished renovation, test fixtures were converted in one of the isolated bathrooms. Management was able to verify the actual water savings and also evaluate the functionality of the converted fixtures.

After reviewing the test results, it was agreed that the projected renovation would produce a payback of less

than one year and save the Airport thousands of dollars in water/sewer costs annually.

### **Components:**

Del Mar Lighting, LLC's recommendation for this renovation project was followed precisely. All water closets were fitted with AquaMyzer kits, consisting of new 3.5 gal. diaphragm kits, along with a 2.75 gpm Inner Cap (Blue Cap).



All urinals were fitted with new 1.5 gal. diaphragm kits as well as a 2.5 gpm Inner Cap (Red Cap).

Water conservation results from changing out the "Inner Caps".

### **Results:**

The renovated fixtures worked perfectly, removing all waste materials very effectively while utilizing only 2.75 gallons of water per flush in the toilets and 1.0 gallon of water per flush in the urinals.

All leaks found within the building during the renovation were eliminated. In addition maintenance requirements for the facility's plumbing system have been dramatically reduced.

It is estimated that this conversion will save the

MNA a minimum of 25,000 gallons of water per day, or over 9,000,000 gallons of water annually. Based on the \$6.45 per thousand gallon rate the annual saving should be well over \$58,000 annually. These savings will produce an annual Return on Investment (ROI) of over two hundred percent, and pay back the investment in less than 6 months.

### **Environmental:**

This water renovation will save MNA approximately 500,000,000 gallons of water over the next 5 year period. At Nashville's projected water/sewer rates, this could produce well over \$400,000 savings over the 5 year period.

**Contacts: Lee Mangrum  
Facility Management  
Metropolitan Nashville  
Airport Authority  
1 Terminal Drive, Suite 501  
Nashville, TN 37214  
(615) 275-1691**

**Peter K. Caldwell  
Del Mar Lighting, LLC  
829 Pipers Lane  
Brentwood, TN 37027  
615-376-4566**