Study Phase

Swimming Pool Modernization at the Anthony F. Veteran & Massaro Park Pool Facilities

Volume 1 Engineering Report

May 19, 2010

Ward Associates, P.C.
Architects | Landscape Architects | Engineers
1500 Lakeland Avenue
Bohemia, N.Y. 11716
Tel: (631) 563-4800 Fax: (631) 563-4807
Sent via Express Mail Delivery

June 11, 2010

Gerard J. Byrne, Comm.
Town of Greenburgh
Department of Parks & Recreation
11 Olympic Lane
Ardsley, N.Y. 10502

Re: Pool Report – AFV & Massaro
   WAPC No. 200-923-00
   Final Report

Dear Commissioner Byrne,

Pursuant to Town Board Resolution No. PR-2 dated 08/04/09, and based on previous verbal approvals from your office, we are pleased to submit herein, five (5) originals of the following final report.

Study Phase
Swimming Pool Modernization at the
Anthony F. Veteran & Massaro Park Pool Facilities
Volume 1
Engineering Report
May 19, 2010

and

Study Phase
Swimming Pool Modernization at the
Anthony F. Veteran & Massaro Park Pool Facilities
Volume 2
Code Compliance Forms
May 19, 2010

It was a pleasure working with you and your staff on this project. Following your review of this report, if you have any questions or wish to discuss the report in further detail, please do not hesitate to contact our office at your convenience.

Sincerely,

Vincent De Colibus, P.E.
Vice President
TOWN BOARD

Paul J. Feiner
Supervisor

Sonja Brown
Councilwoman

Kevin Morgan
Councilman

Diana Juettner
Councilwoman

Francis Sheehan
Councilman

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(*) ex-officio member

DEPARTMENT OF PARKS and RECREATION

Gerard J. Byrne
Commissioner

Joseph Lucasey
Deputy Commissioner
# Table of Contents

**Volume 1**

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td><strong>Executive Summary</strong></td>
<td>1-1</td>
</tr>
<tr>
<td>AP-1</td>
<td>Aerial Photo of Existing Conditions at AFV Park</td>
<td></td>
</tr>
<tr>
<td>AP-2</td>
<td>Aerial Photo of Existing Conditions at Massaro Park</td>
<td></td>
</tr>
<tr>
<td>SK-1</td>
<td>Sketch of Master Plan – Option One (AFV)</td>
<td></td>
</tr>
<tr>
<td>SK-2</td>
<td>Sketch of Master Plan – Option Two (AFV)</td>
<td></td>
</tr>
<tr>
<td>SK-3</td>
<td>Sketch of Proposed Pool Improvement Plan (Massaro)</td>
<td></td>
</tr>
<tr>
<td>SK-4</td>
<td>Sketch of Proposed Sun Shelters &amp; Spray Pad (Massaro)</td>
<td></td>
</tr>
<tr>
<td>SK-5</td>
<td>Sketch of Proposed Multi-Use Sport Court (Massaro)</td>
<td></td>
</tr>
<tr>
<td>2.00</td>
<td><strong>General Overview</strong></td>
<td>2-1</td>
</tr>
<tr>
<td>2.01</td>
<td>Anthony F. Veteran Pool Facility</td>
<td>2-1</td>
</tr>
<tr>
<td>2.02</td>
<td>Massaro Park Pool Facility</td>
<td>2-1</td>
</tr>
<tr>
<td>2.03</td>
<td>Purpose of Report</td>
<td>2-2</td>
</tr>
<tr>
<td>2.04</td>
<td>Organization of Report</td>
<td>2-2</td>
</tr>
<tr>
<td>3.00</td>
<td><strong>Summary of Existing Conditions</strong></td>
<td>3-1</td>
</tr>
<tr>
<td>3.01</td>
<td><strong>Anthony F. Veteran Pool Facility</strong></td>
<td></td>
</tr>
<tr>
<td>3.02</td>
<td>Main Pool</td>
<td>3-1</td>
</tr>
<tr>
<td>3.03</td>
<td>Adult Pool</td>
<td>3-4</td>
</tr>
<tr>
<td>3.04</td>
<td>Interactive Pool</td>
<td>3-8</td>
</tr>
<tr>
<td>3.05</td>
<td>Bathhouse/Sanitary Facilities (MP, AP, IP)</td>
<td>3-10</td>
</tr>
<tr>
<td>3.06</td>
<td>Main Filter Building (MP, AP, IP)</td>
<td>3-10</td>
</tr>
<tr>
<td>3.07</td>
<td>Concession Building</td>
<td>3-12</td>
</tr>
<tr>
<td>3.08</td>
<td>Camp Pool D</td>
<td>3-13</td>
</tr>
<tr>
<td>3.09</td>
<td>Filter Building (Pool D)</td>
<td>3-16</td>
</tr>
<tr>
<td>3.10</td>
<td>Camp Pool E</td>
<td>3-16</td>
</tr>
<tr>
<td>3.11</td>
<td>Camp Pool F</td>
<td>3-18</td>
</tr>
<tr>
<td>3.12</td>
<td>Bathhouse/Sanitary Facilities (Pools D, E, &amp; F)</td>
<td>3-20</td>
</tr>
<tr>
<td></td>
<td>Filter Building (Pools E &amp; F)</td>
<td>3-21</td>
</tr>
<tr>
<td>4.00</td>
<td><strong>Summary of Existing Conditions</strong></td>
<td>4-1</td>
</tr>
<tr>
<td>4.01</td>
<td>Massaro Park Pool Facility</td>
<td>4-1</td>
</tr>
<tr>
<td>4.02</td>
<td>Training Pool</td>
<td>4-3</td>
</tr>
<tr>
<td>4.03</td>
<td>Wading Pool</td>
<td>4-6</td>
</tr>
<tr>
<td>4.04</td>
<td>Bathhouse/Sanitary Facilities</td>
<td>4-6</td>
</tr>
<tr>
<td></td>
<td>Filter Building</td>
<td>4-6</td>
</tr>
<tr>
<td>5.00</td>
<td><strong>Recommended Improvements</strong></td>
<td>5-1</td>
</tr>
<tr>
<td>5.01</td>
<td><strong>Anthony F. Veteran Pool Facility</strong></td>
<td></td>
</tr>
<tr>
<td>5.02</td>
<td>Special Notes Regarding Bottom Inlets</td>
<td>5-1</td>
</tr>
<tr>
<td>5.03</td>
<td>Main Pool</td>
<td>5-2</td>
</tr>
<tr>
<td>5.04</td>
<td>Adult Pool</td>
<td>5-4</td>
</tr>
<tr>
<td>5.05</td>
<td>Interactive Pool</td>
<td>5-6</td>
</tr>
<tr>
<td>5.06</td>
<td>Slide Pool</td>
<td>5-7</td>
</tr>
<tr>
<td>5.07</td>
<td>Bathhouse/Sanitary Facilities (MP, AP, IP, SP)</td>
<td>5-8</td>
</tr>
<tr>
<td>5.08</td>
<td>Main Filter Building (MP, AP, IP, SP)</td>
<td>5-8</td>
</tr>
<tr>
<td>5.09</td>
<td>Concession Building</td>
<td>5-9</td>
</tr>
<tr>
<td>5.10</td>
<td>Camp Pool D</td>
<td>5-10</td>
</tr>
<tr>
<td></td>
<td>Filter Building (Pool D)</td>
<td>5-11</td>
</tr>
</tbody>
</table>
# Table of Contents

## Volume 1 (cont’d.)

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.11</td>
<td>Camp Pool E</td>
<td>5-13</td>
</tr>
<tr>
<td>5.12</td>
<td>Camp Pool F</td>
<td>5-14</td>
</tr>
<tr>
<td>5.13</td>
<td>Bathhouse/Sanitary Facilities (Pools D, E, F)</td>
<td>5-15</td>
</tr>
<tr>
<td>5.14</td>
<td>Filter Building (Pools E &amp; F)</td>
<td>5-15</td>
</tr>
<tr>
<td>6.00</td>
<td><strong>Recommended Improvements</strong></td>
<td>6-1</td>
</tr>
<tr>
<td>6.01</td>
<td><strong>Massaro Park Pool Facility</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Training Pool / Wading Pool / Filter Bldg.</td>
<td>6-1</td>
</tr>
<tr>
<td>6.02</td>
<td>Option A – Replacement of Pools</td>
<td>6-1</td>
</tr>
<tr>
<td>6.03</td>
<td>Option B – Demolition of Pools</td>
<td>6-3</td>
</tr>
<tr>
<td>6.04</td>
<td>Option C – New Recreational Facilities</td>
<td>6-3</td>
</tr>
<tr>
<td>7.00</td>
<td><strong>Recommended Phasing of Construction</strong></td>
<td>7-1</td>
</tr>
<tr>
<td>7.01</td>
<td>General</td>
<td>7-1</td>
</tr>
<tr>
<td>7.02</td>
<td>Phase 1 – AFV Main Facility</td>
<td>7-1</td>
</tr>
<tr>
<td>7.03</td>
<td>Phase 2 – AFV Slide Pool / Concession Area</td>
<td>7-2</td>
</tr>
<tr>
<td>7.04</td>
<td>Phase 3 – Massaro Pools</td>
<td>7-3</td>
</tr>
<tr>
<td>7.05</td>
<td>Phase 4 – AFV Camp Pools</td>
<td>7-3</td>
</tr>
<tr>
<td>8.00</td>
<td><strong>Estimated Design &amp; Construction Costs</strong></td>
<td>8-1</td>
</tr>
<tr>
<td>8.01</td>
<td>General</td>
<td>8-1</td>
</tr>
<tr>
<td>8.02</td>
<td>Phase 1 – AFV Main Facility</td>
<td>8-2</td>
</tr>
<tr>
<td>8.03</td>
<td>Phase 2 – AFV Slide Pool &amp; Concession Area</td>
<td>8-3</td>
</tr>
<tr>
<td>8.04</td>
<td>Phase 3 – Massaro Pools (Option A)</td>
<td>8-4</td>
</tr>
<tr>
<td>8.05</td>
<td>Phase 3 – Massaro Pools (Option B)</td>
<td>8-5</td>
</tr>
<tr>
<td>8.06</td>
<td>Phase 3 – Massaro Pools (Option C)</td>
<td>8-6</td>
</tr>
<tr>
<td>8.07</td>
<td>Phase 4 – AFV Camp Pools</td>
<td>8-6</td>
</tr>
</tbody>
</table>

## Appendices

### Photos of Existing Conditions

#### Anthony F. Veteran Pool Facility

- Appendix 1 - Main Pool
- Appendix 2 - Adult Pool
- Appendix 3 - Interactive Pool
- Appendix 4 - Main Filter Building
- Appendix 5 - Camp Pool D & Filter Bldg.
- Appendix 6 - Camp Pool E
- Appendix 7 - Camp Pool F
- Appendix 8 - Camp Pools E & F - Filter Bldg.

#### Massaro Park Pool Facility

- Appendix 9 - Training Pool
- Appendix 10 - Wading Pool
- Appendix 11 - Filter Building

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TC - 2
1.00 EXECUTIVE SUMMARY

In addition to numerous parks and recreational facilities, the Town of Greenburgh Department of Parks and Recreation owns, operates, and maintains the Anthony F. Veteran and Massaro Park Pool Facilities.

Since its inception, the Anthony F. Veteran pool complex has been very popular with area residents. At the north end of the park, this facility includes a Main Pool with Diving Hopper, Adult (Competitive) Pool, and a recently completed Interactive Pool. Also existing at this location, are cabanas, bathhouses, Concession Building, and existing Filter Building. Located at the south end of the park property, are three (3) existing camp pools designated as Camp Pools "D", "E", and "F". Utilized as instructional and recreational pools, these pools have also been very popular with area day camps.

Massaro Park includes a Training Pool, small Wading Pool, and a Park Building, which includes a small Filter Room and Men's and Women's bathrooms. The Wading Pool is currently provided with an "umbrella" type spray feature.

The Anthony F. Veteran Pool Facility was constructed in the 1960's, while the Massaro Park Pool Facility was constructed in the mid-1970's. Although both facilities have been renovated over the years, conditions have been rapidly deteriorating, thus requiring increased labor and equipment replacement costs, inefficient operation, increased maintenance, and periodic shutdown of pool operations. In many cases, equipment and systems have reached (or exceeded) their expected useful life.

During this same time frame, requirements of the New York State Department of Health (NYSDOH) have been updated and revised on numerous occasions. As a result of these revised regulations, a considerable percentage of the pool and mechanical/electrical systems are no longer in complete conformance with code requirements. Although all pools and facilities are, to some degree, non-compliant with present day code requirements, they are not in violation of these codes. Assuming that no major renovations have been performed at these facilities, state and local health departments permit continued operations, following yearly pre-opening pool inspections. Yearly inspections are conducted by the Westchester County Health Department (WCHD) to ensure the health and safety of all bathers utilizing the facilities.

As stated above, health departments will "grandfather" older pool facilities, as long as major renovations have not been performed. However, if major renovations are required to a pool (or pools), health departments follow an "all or nothing" philosophy. That is, if a pool or pool system is significantly modified, or renovated, the entire pool facility must be in complete compliance with all current code requirements of the NYSDOH.

Due to rapidly deteriorating conditions at these facilities, the inevitable and foreseeable need for major renovation or replacement of pools and equipment, and to ensure allocation of sufficient funding, in September of 2009, the Town of Greenburgh retained Ward Associates, P.C. to prepare a report for all facilities at the Anthony F. Veteran and Massaro Park Pool Facilities. The purpose of this report was to document existing conditions, designate conforming and non-conforming items, propose recommendations, and compile approximate costs, for repair and/or replacement of each pool and pool system at each facility.
Based on the above, this report (comprising two [2] volumes) has been compiled to ensure complete conformance with code requirements, the health and safety of all bathers, efficient operations, reduced equipment and maintenance costs, and to provide facilities with an approximate life expectancy of thirty (30) years for pools, and twenty (20) years for equipment. Volume 1 describes existing conditions and proposed recommendations, and also includes a summary of construction costs for each phase, as detailed below. Volume 2 includes “Code Compliance Forms” for each pool. These forms provide a summarized version of NYSDOH code requirements, and a quick visual indication of the degree of compliance (or non-compliance) with codes.

Recommendations include renovations to, or replacement of, facilities in a phased construction approach. A total of four (4) phases are discussed herein. In summary, proposed items of work included under each phase are listed below.

**Phase 1 -- Anthony F. Veteran (Main Facility)**

1. Partial demolition of existing Main Pool (MP) walls.
2. Complete demolition of MP floor.
3. Construction of new MP walls (inside existing walls).
5. Complete demolition of existing Adult Pool (AP).
6. Construction of a new and deeper AP.
7. Replacement of all deck equipment for MP & AP.
8. Minor renovations to the Interactive Pool (IP).
11. Add Alternate for existing Filter Bldg. modifications, and new roof to provide additional seating area for the Concession Bldg.

It should be noted that implementation of the proposed recommendations listed above will maintain the existence of the cabanas. In all probability, a complete replacement of this facility would necessitate the demolition and elimination of the cabanas.

**Phase 2 – Anthony F. Veteran (Slide & Concession)**

1. Construction of new SP and waterslide, including decks, fencing, and underground pump reservoir (if required by the WCHD).
2. Renovations to the Concession Bldg.
Phase 3 - Massaro Park

1. Option A – Replacement of Pools
   a. Demolish existing Training Pool (TP), Wading Pool (WP), and handball courts.
   b. Construct new combination TP/ WP with zero depth entry.
   c. Replace all pool piping, equipment, fencing, gates, etc.
   d. Construct a new Filter Bldg. for new TP/ WP equipment.

2. Option B – Demolition of Existing Pools Only
   a. Demolish existing Training Pool (TP), Wading Pool (WP), pipe and equipment, pool decks, fencing, gates, and handball courts.
   b. Backfill and compact the entire area, and return the facility to its original "park-like" condition.

3. Option C – Demolition of Pools & Installation of Recreational Equipment
   a. Demolish existing Training Pool (TP), Wading Pool (WP), pipe and equipment, pool decks, fencing, gates, and handball courts.
   b. Backfill and compact the entire area, as necessary for the future possible installation of recreational equipment.

Although once a very popular facility, in recent years, the Town of Greenburgh has experienced a steadily declining attendance at the Massaro Park Pool Facility. For this reason, Town Board members, Town personnel, and community members should analyze and discuss the viability and economic feasibility of performing work at this facility. The advantages, disadvantages, and comparative costs of pool replacement vs. complete demolition (with or without new recreational features) should be examined in detail.

Phase 4 – Anthony F. Veteran (Camp Pools)

1. Complete demolition and replacement of Camp Pool D, including new pool stairs, pipe, valves, fittings, equipment, fencing, gates, etc.

2. Demolition of existing Filter Bldg. for Camp Pool D, and construction of new slightly larger Filter Bldg.

3. Renovation of Camp Pools E & F, including coping stones, decks, PVC liners, main drains, tile bands, pool stairs, pipe, valves, fitting, equipment, fencing, gates, etc.

4. Installation of service sinks in the Bathhouses.
5. Renovation of existing Filter Bldg. for Camp Pools E & F, including new ventilation, wall repairs, lighting, selected mechanical / electrical equipment, pipe, valves, fittings, etc.

A more detailed listing of proposed recommended work items can be found in the relevant portions of Section 5.00 (Anthony F. Veteran) and Section 6.00 (Massaro) of this report.

Estimated engineering and construction costs have been calculated, for each individual phase, based on the proposed recommendations included herein. As requested by the Owner, in order to permit ample time for analysis, discussion of options, and the acquisition of available funds, construction costs are presented in 2011 dollars, and are projected to the year 2016.

Estimated totals shown herein include a 6% allowance for Contractors' bonds and insurances, 10% for contingencies, 21% for Contractors' overhead and profit, 10% for engineering design and construction administration fees, and estimated average labor and material cost increases of 2.5% per year for the years 2011 through 2016.

It should be noted that costs included in this report are estimates only. Due to the uncertain economic climate expected in the next few years, all costs including labor and material, design, construction administration, profit margins, allowances, contingencies, etc., should be verified and adjusted during the detailed engineering and design phase.

As detailed in Section 8.00 of the report, in summary, estimated total engineering and construction costs are included below.

**Summary of Estimated Engineering and Construction Costs**

<table>
<thead>
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<th>2016</th>
</tr>
</thead>
<tbody>
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<td>AFV – Add Alternate</td>
<td>$ 705,000</td>
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<td>(Existing Filter Bldg. Roof)</td>
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<td>$1,120,000</td>
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**Notes:**

(*) - Monetary totals do not include engineering and construction costs for additional recreational facilities.
Included at the end of this section, for both facilities, are aerial photographs depicting existing conditions, and color renderings illustrating possible options that may warrant consideration. Photographs and renderings were previously included in the "Preliminary Concepts Report" dated 10/22/09. Although not all options are discussed in detail in the report, these items have been included to indicate possible alternates available to the Town.

Aerial photographs and color renderings provided at the end of this section include the following.

<table>
<thead>
<tr>
<th>Sheet No.</th>
<th>Sheet Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP-1 of 2</td>
<td>Aerial Photo of Existing Conditions at AFV Park</td>
</tr>
<tr>
<td>AP-2 of 2</td>
<td>Aerial Photo of Existing Conditions at Massaro Park</td>
</tr>
<tr>
<td>SK-1 of 5</td>
<td>Sketch of Master Plan – Option One (AFV)</td>
</tr>
<tr>
<td>SK-2 of 5</td>
<td>Sketch of Master Plan – Option Two (AFV)</td>
</tr>
<tr>
<td>SK-3 of 5</td>
<td>Sketch of Proposed Pool Improvement Plan (Massaro)</td>
</tr>
<tr>
<td>SK-4 of 5</td>
<td>Sketch of Proposed Sun Shelters &amp; Spray Pad (Massaro)</td>
</tr>
<tr>
<td>SK-5 of 5</td>
<td>Sketch of Proposed Multi-Use Sport Court (Massaro)</td>
</tr>
</tbody>
</table>
2.00 GENERAL OVERVIEW

2.01 Anthony F. Veteran Pool Facility

Under the jurisdiction of the Department of Parks and Recreation, the Town of Greenburgh owns, maintains, and operates the Anthony F. Veteran Pool Facility for the residents of the incorporated areas of Greenburgh. Initially constructed in the 1960's, this facility has exhibited deteriorating conditions, thus requiring increased maintenance, and repair or replacement of equipment, materials, and systems, which have resulted in increased operational and capital costs.

Although renovated on numerous occasions in the past, code requirements of the New York State Department of Health (NYSDOH) have also been updated in recent years, thus, the facility is in non-conformance with portions of Chapter 1, Subpart 6-1, of the State Sanitary Code entitled "Swimming Pools".

This facility includes a Main Pool, Adult Pool, and a recently constructed Interactive Pool for children and toddlers. All three (3) pools are served by a common Filter Building, located at the north end of the site, adjacent to the Interactive Pool. This portion of the facility also includes three (3) separate Bathhouse facilities, numerous cabanas, a Lifeguard Building, and a separate Concession Building.

In an underground Balance (or Surge) Tank, water from the Main Pool mixes with water from the Adult Pool, and then directed to a common diatomaceous earth (DE) vacuum filter system located in the Filter Building. The Interactive Pool is serviced by a separate Balance Tank and high rate sand (HRS) filter system, located in adjacent rooms in the Filter Building.

Located at the south end of the site, the Town operates three (3) separate camp pools, designated by the Town as Camp Pools "D", "E", and "F". Camp Pool D is provided with a separate Filter Building, located adjacent to the pool. This pool is provided with a small high rate sand (HRS) filter and pump system. Camp Pools E and F are similarly provided with designated HRS filter and pump systems, however all equipment for these pools is located within an additional Filter Building, constructed just south of Camp Pools E and F.

2.02 Massaro Park Pool Facility

In addition to the Anthony F. Veteran Pool Facility described above, the Town of Greenburgh owns, maintains, and operates the Massaro Park Pool Facility located in Elmsford, N.Y. Similar to the Anthony F. Veteran Pool Facility, the pools at this location have become outdated, thus requiring increased maintenance, and repair or replacement of equipment, materials, and systems.

Although this facility has been renovated in the past, recent revisions to the code requirements of the NYSDOH have rendered the facility in non-conformance with portions of Chapter 1, Subpart 6-1, of the State Sanitary Code entitled "Swimming Pools".
Constructed for local residents in the mid-1970's, Massaro Park includes a small Training Pool and a small Wading Pool. In 1992, the Wading Pool was renovated to include a "Rain Drop" umbrella type spray feature, deck sprays, and bottom bubblers.

Each pool is provided with a designated HRS filter and pump system, both of which are located within a small separate Filter Room of the Bathhouse Building.

2.03 Purpose of Report

As a result of rising operational and maintenance costs, increasing rates of equipment deterioration, and lack of compliance with the most recent NYSDOH code requirements, in recent years, the Town of Greenburgh has considered the complete renovation or replacement of all pools and amenities at both facilities.

Based on the above, the Town has requested an Engineering Report detailing:

a. The existing present day conditions at all facilities.
b. The extent of conformance or non-conformance with all code requirements.
c. The logistical and economical feasibility of salvaging and repairing pools and related systems, to ensure code compliance.
d. The logistical and economical feasibility of demolishing and replacing pools and related systems, to ensure code compliance.
e. Recommendations as to type and usage for proposed facilities.
f. Recommendations for the phasing of work to mitigate the duration of pool closures at the facilities.
g. Estimated design and construction costs associated with all options (repair vs. replacement).

2.04 Organization of Report

The entire report is divided into two (2) separate volumes, as follows.

<table>
<thead>
<tr>
<th>Volume 1</th>
<th>Volume 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Report</td>
<td>Code Compliance Forms</td>
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In order to address the items listed above, the entire report included herein is provided in outline format, for brevity. For simplicity and clarity, each pool (Filter Bldg., Bathhouse, etc.) is individually discussed.

Volume 1 includes a brief condensed version of the entire report (Executive Summary), which is included for use by Town Board members, Commissioners, etc.

This volume describes, in detail, the existing conditions at each pool and structure at the Anthony F. Veteran and Massaro Park Pool Facilities, respectively. Photographs are provided at the end of this volume, in Appendices 1 through 11, for all pools and structures discussed in the report. This volume also includes recommended improvements at each facility, and the estimated engineering design and construction costs to implement the proposed improvements. In order to ensure the continued operation of pool facilities during the summer months, Volume 1 also describes possible phasing options for construction activities.
Volume 2 includes a set of “Code Compliance Forms”, in Appendices 1 through 8, for each pool in existence at the Anthony F. Veteran and Massaro Park Pool Facilities. Code Compliance Forms are based on the most recent requirements of the NYSDOH, Chapter 1, Subpart 6-1, of the State Sanitary Code entitled “Swimming Pools”. Forms are arranged in tabular format, detailing individual items and systems, and provide a quick indication of the conformance or non-conformance (highlighted in red) with federal, state, local, and health department codes and regulations.

Code Compliance Forms also indicate compliance or non-compliance with the recently enacted Virginia Graeme Baker Act (VGBA). This act mandates the replacement of suction outlets with acceptable covers or gratings, certified and approved by the Consumer Product Safety Commission (CPSC), as being in conformance with ASME/ANSI A112.19.8-2008 and A112.19.8a-2008.
3.00 SUMMARY OF EXISTING CONDITIONS
ANTHONY F. VETERAN POOL FACILITY

3.01 Main Pool

The Main Pool is a "T-shaped" poured concrete shell, measuring 148'-4" long x 48'-4" wide, provided with a diving hopper measuring 43'-0" long x 40'-0" wide. Total pool volume is approximately 352,000 gallons. The swimming pool portion of the structure has a minimum depth of 3'-0", and a maximum depth of 5'-0". The diving hopper portion of the pool has a minimum depth of 5'-0", and a maximum depth of 13'-6". System design recirculation flow is 975 gallons per minute (gpm), providing a design turnover rate (TOR) of 6.0 hours.

All wetted surfaces of the pool shell are provided with a white, spray gun applied, fiberglass reinforced polyester (FRP) liner.

The diving hopper was originally designed to include three (3) diving boards, one (1) each at 0.5M, 1M, and 3M, however the 3M diving stand and board was previously removed. Although originally designed and constructed with underwater lights, all underwater lights were previously and completely removed. Without underwater lights and proper overhead lighting, night swimming at this pool is prohibited by NYSDOH Code.

The pool is piped to an underground Balance (or Surge) Tank adjacent to the pool. Simultaneously, this Balance Tank also accepts flow from the Adult Pool, thus combining the flows of the two (2) pools. The combined flow is directed to a single DE vacuum filter, and returned to the pools via a single recirculation pump. Although not strictly in violation of the Code, the combining of pool flows is strongly discouraged. Many local health departments, such as the Westchester County Health Department (WCHD), supersede the NYSDOH Code, and will no longer permit this type of combined system.

On 08/21/09, an inspection was performed of the pool and amenities, to determine: a) the existing conditions of the pool, decks, piping, and mechanical systems; b) all deficient items; and c) to ascertain the extent of compliance (or non-compliance) with NYSDOH code requirements.

Photographs of existing conditions, referenced herein, are included in Appendix 1 (for the pool) and Appendix 4 (for the Filter Building). Following the general format of the Code Compliance Forms provided in Volume 2 of the report, results of this inspection revealed the following deficiencies, listed below in outline format.

**Pool Shell:** Structural integrity appears intact. White FRP liner has required repairs with increasing frequency.

**Turnover Rate:** TOR is at the maximum permissible value (6.0 hours). A clogged or dirty filter will result in an excessive TOR > 6.0 hours (code violation).

**Diving Area:** Diving stands are rusting & corroding. Diving boards appear to be adequate. Some "diving envelope" dimensions are inadequate.
(code violation), as detailed further herein. See Photos MP-04 & MP-06.

Lifeguard Chairs: Metal parts are rusted and corroded. Deck platforms are delaminating. Railings are not provided on platforms. See Photos MP-01, MP-02, & MP-13.

Safety Equipment: Missing 15' long reaching pole (code violation).

Pool Ladders: Missing rubber cups at bottom of rails.

Pool Decks: Poured concrete. Structurally sound, but very dirty. Very few cracks were found. No settlement is evident. Expansion joints and sealant are deteriorating or missing. A significant portion of all decks slopes toward the pool (code violation). See Photo MP-14.

Fencing: Entire facility is adequately fenced. Some self-closing, self-latching gates require repair.

Depth Markers: 1" x 1" tile bands around pool are broken, lifting, missing, incomplete, and seriously deteriorated. Many areas have been repaired or filled with grout. Depth marker signs are provided, although additional signs are required. See Photos MP-03 & MP-05.

Lighting: All pool U/W lights have been completely abandoned and filled with grout. Floodlights (for safety) are provided at the corners of the facility. There is no night swimming at the pool.

Cross Connection: Hose bibbs at Bathhouses are not provided with vacuum breakers (code violation). A double check valve (DCV) is provided in the Filter Bldg., however the valve is severely corroded. See Photo FB-04.

Fill Spout: Located under diving board. Properly located but has insufficient protection for bather safety. See Photo MP-06.

Recirculation Sys: Flow is combined with Adult Pool, resulting in inefficient operation of both pools (WCHD code violation).

Piping Systems: In Filter Bldg., a conglomeration of polyvinyl chloride (PVC), cast iron (CI), galvanized steel (GS), and copper (Cu). Severe corrosion is present on ferrous pipes and flanges. Past leakage is evident. See Photos FB-02, 04, & 06.

Most valves are neither numbered nor tagged (code violation). A valve operation chart is not provided in the Filter Bldg. (code violation). Some pipes are undersized (code violation).
Gutters: FRP lined concrete. Appear to be in satisfactory condition. Gutters provide partial surge capacity only. Although doubtful, remaining surge capacity may be provided in the surge tank. See Photo MP-15.

Main Drains: Properly installed, however piping is not hydraulically balanced (code violation). Main drain piping is undersized and does not have adequate cover over the pipe (code violation).

VGBA: Two (2) stainless steel (SS) Virginia Graeme Baker Act (VGBA) certified cover/gratings are installed, and are properly grounded and bonded as per National Electric Code (NEC) regulations. See Photo MP-08.

Pump Strainers: Severely rusted and corroded (code violation).

Flow Control: Flow control valves (FCV) are not provided on the system (code violation).

Return Inlets: Pipe is "looped" but reduces from 1 – 8" pipe to 2 – 6" pipes (code violation). Inlets are wall mounted. Some protrude beyond the wall (code violation). Although not required for pools less than 60' wide, the WCHD may require the installation of floor inlets. No inlets are provided within 5' of pool corners (code violation), or at recessed steps (code violation).

Filter: Vacuum diatomaceous earth (DE) filter accepts water from Main Pool and Adult Pool (WCHD code violation). Filter tank is slightly undersized (although code compliant) and is significantly corroding. Previous tank repairs are evident. See Photo FB-03.

Note: DE filter media is considered to be an air-borne health hazard. As such, few municipalities continue to use this type of system.

There are no vacuum gauges, pump limit switches, or DE backwash separation tank installed (all code violations).

Disinfection Sys: System utilizes calcium hypochlorite \([\text{Ca(OCl)}_2]\) tablets. Since the elimination of the carbon dioxide (CO\(_2\)) system for pH control, the tablet system has worked well.

pH Control: System utilizes liquid muriatic acid (code compliant), however acid is stored in drums labeled "HYPOCHLORITE" (code violation). If hypochlorite is accidentally mixed with muriatic acid, deadly toxic gases are formed. See Photo FB-11.

Bathhouses: Patrons do not pass through Bathhouses before entering the pool (code violation). Health departments typically overlook this infraction, if patrons have reasonable access to Bathhouses upon entering the facility.
Tile and/or epoxy floors are in good condition. If the design bather capacity of the entire facility remains unchanged, sanitary fixture counts are (and will be) compliant with NYS Building Code requirements.


ADA Accessibility: The pool is not handicap accessible (violation of ADA codes). As per ADA regulations, one (1) primary and one (1) secondary means of access must be provided. The two (2) means of access cannot be duplicated.

Special Note: Town personnel indicated that live (but abandoned) underground electrical cables have previously been found in the vicinity of the Main Pool. In one instance, a "smoking earth" phenomenon was discovered by lifeguards. Apparently, this incident was caused by short circuiting of U/G cables. When work is performed on this project, all Contractors must be advised of this condition.

For a more detailed listing of design and construction parameters, and the degree of compliance (or non-compliance) with NYSDOH code requirements, refer to Appendix 1, entitled "Code Compliance Forms – Anthony F. Veteran Pool Facility – Main Pool", included in Volume 2 of this report.

3.02 Adult Pool

The Adult Pool is a rectangular shaped poured concrete shell, measuring 82'-1" long x 56'-0" wide. Total pool volume is approximately 142,030 gallons. The pool has a minimum depth of 3'-6", and a maximum depth of 4'-9". Starting blocks are provided at the deep end of the pool. System design recirculation flow is 395 gallons per minute (gpm), providing a design turnover rate (TOR) of 6.0 hours.

All wetted surfaces of the pool shell are provided with a white, spray gun applied fiberglass reinforced polyester (FRP) liner.

An ADA accessible ramp is provided. The ramp starts at deck level at the deep end of the pool, and enters the pool at the shallow end.

Although originally designed and constructed with underwater lights, all underwater lights were previously and completely removed. Without underwater lights and proper overhead lighting, night swimming at this pool is prohibited by NYSDOH Code.

The pool is piped to an underground Balance (or Surge) Tank adjacent to the pool. Simultaneously, this Balance Tank also accepts flow from the Main Pool, thus combining the flows of the two (2) pools. The combined flow is directed to a single DE vacuum filter, and returned to the pools via a single recirculation pump. Although not strictly in violation of the Code, the combining of pool flows is strongly discouraged. Many local health departments, such as the Westchester County Health Department (WCHD), supercede the NYSDOH Code, and will no longer permit this type of combined system.
On 08/21/09, an inspection was performed of the pool and amenities, to determine: a) the existing conditions of the pool, decks, piping, and mechanical systems; b) all deficient items; and c) to ascertain the extent of compliance (or non-compliance) with NYSDOH code requirements.

Photographs of existing conditions, referenced herein, are included in Appendix 2 (for the pool) and Appendix 4 (for the Filter Building). Following the general format of the Code Compliance Forms provided in Volume 2 of the report, results of this inspection revealed the following deficiencies, listed below in outline format.

**Pool Shell:**  Structural integrity appears intact. White FRP liner has required repairs with increasing frequency.

**Turnover Rate:**  TOR is at the maximum permissible value (6.0 hours). A clogged or dirty filter will result in an excessive TOR > 6.0 hours (code violation).

**Pool Ladders:**  Missing rubber cups at bottom of rails. No ladders (or recessed steps) at deep end (code violation). Ladders (or recessed steps) are not provided on both sides of pool (code violation). Ladder at N/W corner of pool was removed (code violation).

**Pool Decks:**  Poured concrete. Structurally sound, but very dirty. Very few cracks were found. No settlement is evident. Expansion joints and sealant are deteriorating or missing.

A significant portion of all decks slopes toward the pool (code violation). Quantity of deck drains in insufficient (code violation). No hose bibbs provided around decks (code violation). See Photo AP-03.

**Fencing:**  Entire facility is adequately fenced. Some self-closing, self-latching gates require repair.

**Depth Markers:**  1" x 1" tile bands around pool are uneven, broken, lifting, missing, incomplete, and seriously deteriorated (code violation). Many areas have been repaired or filled with grout. Depth marker signs are provided, although additional signs are required. See Photo AP-01.

**Lifeguard Chairs:**  Original design included two (2) permanent L/G chairs. One (1) portable chair was provided. The permanent chair at the S/W corner of the pool was removed and abandoned (code violation).

**Safety Equipment:**  Missing 15’ long reaching pole (code violation).

**Lighting:**  All pool U/W lights have been completely abandoned and filled with grout. Floodlights (for safety) are provided at the corners of the facility. There is no night swimming at the pool.
Cross Connection: Hose bibbs at Bathhouses are not provided with vacuum breakers (code violation). A double check valve (DCV) is provided in the Filter Bldg., however the valve is severely corroded. See Photo FB-04.

Fill Spout: Pool is filled via fill spout at Main Pool, through the interconnecting equalizer line.

Recirculation Sys: Flow is combined with Adult Pool, resulting in inefficient operation of both pools (WCHD code violation).

Piping Systems: In Filter Bldg., a conglomeration of polyvinyl chloride (PVC), cast iron (CI), galvanized steel (GS), and copper (Cu). Severe corrosion is present on ferrous pipes and flanges. Past leakage is evident. See Photos FB-02, FB-04, & FB-06. Most valves are neither numbered nor tagged (code violation). A valve operation chart is not provided in the Filter Bldg. (code violation). Some pipes are undersized (code violation).

Gutters: FRP lined concrete. Appear to be in satisfactory condition. Gutters provide partial surge capacity only. Although doubtful, remaining surge capacity may be provided in the surge tank. See Photo AP-04.

Main Drains: Properly installed, however piping is not hydraulically balanced (code violation). Maximum distance from drains to sidewalls of pool has been exceeded (code violation).

VGBA: Two (2) - 18" x 18" PVC Virginia Graeme Baker Act (VGBA) certified cover/gratings are installed. Sump dimensions are unknown. See Photo AP-05.

Pump Strainers: Severely rusted and corroded (code violation).

Flow Control: Flow control valves (FCV) are not provided on the system (code violation).

Return Inlets: Pipe is "looped" but reduces from 1 – 4" pipe to 2 – 2" pipes (code violation). Inlets are wall mounted. Some protrude beyond the wall (code violation). Although not required for pools less than 60' wide, the WCHD may require the installation of floor inlets.

Filter: Vacuum diatomaceous earth (DE) filter accepts water from Main Pool and Adult Pool (WCHD code violation). Filter tank is slightly undersized (although code compliant) and is significantly corroding. Previous tank repairs are evident. See Photo FB-03.

Note: DE filter media is considered to be an air-borne health hazard. As such, few municipalities continue to use this type of system.
There are no vacuum gauges, pump limit switches, or DE backwash separation tank installed (all code violations).

**Disinfection Sys:** System utilizes calcium hypochlorite \([\text{Ca(OCl)}_2]\) tablets. Since the elimination of the carbon dioxide \((\text{CO}_2)\) system for pH control, the tablet system has worked well.

**pH Control:** System utilizes liquid muriatic acid (code compliant), however acid is stored in drums labeled "HYPOCHLORITE" (code violation). If hypochlorite is accidentally mixed with muriatic acid, deadly toxic gases are formed. See Photo FB-11.

**Bathhouses:** Patrons do not pass through Bathhouses before entering the pool (code violation). Health departments typically overlook this infraction, if patrons have reasonable access to Bathhouses upon entering the facility.

Tile and/or epoxy floors are in good condition. If the design bather capacity of the entire facility remains unchanged, sanitary fixture counts are (and will be) compliant with NYS Building Code requirements.

**O&M Manual:** There is no Operations & Maintenance (O&M) Manual at the facility (code violation).

**Starting Blocks:** Six (6) starting blocks are installed at the deep end (4'-9") of the pool (code violation). Minimum water depth with starting blocks = 6'-0".

**ADA Accessibility:** The pool is provided with an ADA accessible ramp only (code violation), which is considered to be a primary means of ingress/egress. As per ADA regulations, one (1) primary and one (1) secondary means of access must be provided. The two (2) means of access cannot be duplicated.

**Special Note:** Town personnel indicated that live (but abandoned) underground electrical cables have previously been found in the vicinity of the Main Pool. In one instance, a "smoking earth" phenomenon was discovered by lifeguards. Apparently, this incident was caused by short circuiting of U/G cables. Live cables may also exist in the vicinity of the Adult Pool. When work is performed on this project, all Contractors must be advised of this condition.

For a more detailed listing of design and construction parameters, and the degree of compliance (or non-compliance) with NYSDOH code requirements, refer to Appendix 2, entitled "Code Compliance Forms – Anthony F. Veteran Pool Facility – Adult Pool", included in Volume 2 of this report.
3.03 Interactive Pool

Recently completed in June of 2004, the Interactive Pool is a multi-purpose, trapezoidal shaped poured concrete structure, measuring 100'-0" long x 30'-0" to 50'-0" wide. Total pool volume is approximately 49,210 gallons. An ADA accessible ramp is provided at the shallow end of the pool. The pool has a minimum depth of 0'-0" at the beginning of the entrance ramp, and a maximum depth of 2'-6". Recessed steps with handrails are provided at the deep end of the pool. System design recirculation flow is 500 gallons per minute (gpm), providing a design turnover rate (TOR) of 1.64 hours.

In general, the pool is comprised of three (3) areas. A shallow (12" +/-) wading area is provided at the 30' wide section of the pool. This area was designed for infants and toddlers, and includes a series of bottom bubblers.

The center section was designed for older children, with depths ranging from 12" to 24" +/-, and is provided with an Interactive Play Structure, and “Tea Cup” and “Tumble Bucket” spray features.

The deep end of the pool is provided with depths of 24" to 30" +/-, and is used for general swimming and instruction of bathers. This portion of the pool is provided with float lines to delineate spray play areas from the instructional area.

The total of all spray feature flows is approximately 1,675 gpm. When combined with the recirculation flow of 500 gpm, the total of all flows to this pool is 2,175 gpm.

All wetted surfaces of the pool shell are provided with a light blue painted finish. Underwater and overhead lighting systems are not provided, therefore night swimming at this pool is prohibited by NYSDOH code regulations.

The pool is piped to an underground concrete Balance (or Surge) Tank located adjacent to the pool. From this tank, pipes are run to the existing Main Filter Building, which houses all equipment for the Main Pool and Adult Pool. Recirculation flows from the Balance Tank are directed to a designated high rate sand (HRS) filter and pump system. Feature flows are pulled directly from the pool, to the Main Filter Building, and returned to the pool via designated feature pumps.

On 08/21/09, an inspection was performed of the pool and amenities, to determine: a) the existing conditions of the pool, decks, piping, and mechanical systems; b) all deficient items; and c) to ascertain the extent of compliance (or non-compliance) with NYSDOH code requirements. In general, the Interactive Pool is in excellent condition, including all pumps, strainers, filter, valves, and miscellaneous associated systems.

Photographs of existing conditions, referenced herein, are included in Appendix 3 (for the pool) and Appendix 4 (for the Filter Building). Following the general format of the Code Compliance Forms provided in Volume 2 of this report, inspection results and minor deficiencies are listed below in outline format.

Pool Decks: Hose bibbs are not provided for washing of decks (code violation). Hose bibbs must be provided with vacuum breakers.
Fencing: Top of 6' high chain link fence along east side is loose, damaged, and unstable (code violation). Top of fence is not selvage knuckled, that is, barbs are exposed above the top rail (safety issue). See Photos IP-04 & IP-05.

The 4' high fence and gate on the south side require replacement. Gate is not self-closing, self-latching (code violation). See Photos IP-01, IP-02, & IP-03.

Fill Spout: Pool is filled via fill funnel in Filter Bldg. A pipe coupling has been added to the end of the fill pipe, thus compromising the air gap at the fill funnel (code violation). See Photo FB-12.

Gutters: Pool is provided with a stainless steel gutter system with weirs, thus providing 100% "in-pool" surge capacity. This method of providing surge capacity is completely compliant with code.

Main Drains: One (1) main drain is provided, measuring 2'-0" wide x 25'-0" long. Based on these dimensions, CPSC considers the drain to be "unblockable". A secondary safety feature (gravity flow to Balance Tank) is already installed.

VGBA: Although not yet installed, Town personnel have ordered VGBA certified main drain gratings. Gratings will be installed prior to pool opening.

Return Inlets: Although not required by code, bottom mounted floor inlets are provided.

Disinfection Sys: System utilizes calcium hypochlorite \([\text{Ca(OCI)}_2]\) tablets, which is in full compliance with code.

pH Control: Town continues to use CO\(_2\) gas. Although calcium hypochlorite tablets are used for chlorination, no deleterious effects have resulted from the use of CO\(_2\).

Bathhouses: Patrons do not pass through Bathhouses before entering the pool (code violation). Health departments typically overlook this infraction, if patrons have reasonable access to Bathhouses upon entering the facility.

Tile and/or epoxy floors are in good condition. If the design bather capacity of the entire facility remains unchanged, sanitary fixture counts are (and will be) compliant with NYS Building Code requirements.

ADA Accessibility: The pool is provided with an ADA accessible ramp at the shallow end.

Special Notes: One (1) or two (2) flanges at the Interactive Play Structure are missing safety pads (safety issue).
At present, ultraviolet (UV) light disinfection systems are required for spray ground facilities, but are not required for pools with spray features. However, in recent years, the NYSDOH has considered the possibility of requiring these systems at pools also. If code changes are made, a UV system may be required at this pool in the future.

For a more detailed listing of design and construction parameters, and the degree of compliance (or non-compliance) with NYSDOH code requirements, refer to Appendix 3, entitled “Code Compliance Forms – Anthony F. Veteran Pool Facility – Interactive Pool”, included in Volume 2 of this report.

3.04 Bathhouse/Sanitary Facilities (MP, AP, IP)

As discussed in Section 1.00 of this report, the Main Pool, Adult Pool, and Interactive Pool, are served by three (3) separate Bathhouses. One (1) Bathhouse is situated at the north end of the site, and the two (2) remaining Bathhouses are situated at the south end of this portion of the site, one (1) on each side of the Adult Pool.

Bathhouse construction is in conformance with NYSDOH and NYS Building Codes. To determine the required amount of sanitary fixtures, as dictated by recently revised NYS Building Codes, the total Design Bather Capacity (DBC) must be calculated for the entire portion of this facility.

As per NYSDOH code requirements, the DBC of a pool facility is calculated by determining the maximum allowable quantity of bathers based on pool area, plus the maximum allowable quantity of bathers based on an “excess deck allowance”. At the Anthony F. Veteran Pools, combining all pool and deck areas for the Main Pool, Adult Pool, and Interactive Pool, results in a total DBC of 1,356 bathers. Of this total, the NYS Building Code assumes 50% (678) male and 50% (678) female bathers.

Based on these quantities, and the existing total quantity of sanitary fixtures (e.g. – water closets, urinals, lavatories, drinking fountains, and service sinks), inspection results indicate that this portion of the pool facility meets or exceeds code requirements for sanitary fixtures.

Therefore, if total cumulative pool and deck areas are not increased in the future, additional sanitary fixtures will not be required. However, if additional pools and/or deck areas are constructed, additional sanitary fixtures may be required.

3.05 Main Filter Building (MP, AP, IP)

Situated just to the northeast of the Interactive Pool, the Main Filter Building includes all pumps, filters, chemical controllers, piping, valves, and miscellaneous equipment for the Main Pool, Adult Pool, and Interactive Pool.

Photographs of existing conditions in the Main Filter Building, referenced herein, are included in Appendix 4 of this volume of the report.
Field inspections performed on 08/21/09 indicate the following results and deficiencies listed herein.

Building Integrity: The structural integrity of this building is highly questionable. The building is significantly deteriorating. Numerous structural cracks are visible in the walls. Large voids are present on interior walls. See Photos FB-01 & FB-09.

Structural steel is severely rusted. Corrosion of steel is evident. Atmosphere is very hot and humid. Ventilation is poor.

The north end of this partially buried structure has a different roof structural system comprised of marginal lightweight steel girder framing members with built-up wood framing members spanning from this girder to the adjacent walls. The center bearing wall is a concrete masonry wall with many random openings and holes created for various projects in the past. The integrity of this wall has been compromised and will require some rebuilding to re-establish the load bearing capacity needed.

The roof is framed with wood members, which are insulated and faced with gypsum board. There did not appear to be any available venting or vapor barriers protecting the roof construction.

The south Filter Room, which appeared to be an extension to the northern section, has more substantial steel roof structural elements. These girders have some significant rust accumulations as mentioned above. There exists a defined change in the outer wall construction of this section of the building indicating that the walls were extended from approximately four foot above the floor line to the existing wall height that currently exists. This extended wall area has been modified a few times by pool construction piping throughout the years. The integrity of exterior waterproofing is questionable due to the moisture and organic growth evidenced at the inside face of these upper Filter Room walls.

The roof of this building is a flat asphalt granular-surfaced black membrane type roofing with a few exhaust fan penetrations serving the Filter Room spaces below. The grade height around the building varies from almost flush with the roof surface at the north end to three feet plus below the roof at the south end of the structure. A chain link fence guards against patron access to this roof from the public areas of the site. The east face of the Filter Building is fully exposed leaving this edge of the roof one story above the grade. A small roof extension along the east wall of the building covers the electrical transformer pad.

Accessibility: A narrow asphalt path provides vehicular access from the parking lot to the Main Filter Building. Vehicular access to the building, for
deliveries of filter media, CO₂ gas cylinders, calcium hypochlorite tablets, muriatic acid, etc., is extremely limited and unsafe. There is a very sharp grade change on the east side of the path, with no existing guardrails or fencing.

Pipe & Equipment: Metallic piping and ferrous equipment is rusted and corroded throughout the building.

Wiring: In isolated areas of the building, electrical wires have been cut, are exposed, and are hanging from corroded open junction boxes and panels. See Photo FB-05.

Electrical Panels: Panels are old, rusted, and corroded. Labeling at panels is nonexistent.

Lighting: Lighting is poor and inadequate.

Chemical Storage: Drums of liquid muriatic acid are stored adjacent to calcium hypochlorite tablet systems (code violation). No chemical containment is provided (NYSDEC code violation). See Photo FB-10.

3.06 Concession Building

Located immediately north of the Filter Building, the Concession Support Building services the pool patrons. There are many grade issues surrounding this building due to the existing site conditions around and through this entire area. The Town has installed a laminated wood roof structure that has extended the useful weather protected and sun protected seating in this section of the park.

A review of the interior spaces in the Concession area revealed a long somewhat inefficient space for serving the Concession needs. The equipment that existed appeared to be adequate, however the long, narrow building shape and the various grade elevation changes in this area create some inefficiencies for the Concession staff serving the pool patrons.

The lack of walk-in type refrigerator / freezer units forces the use of several smaller units which, due to the building configuration, place the units away from the service areas.

The quarry tile floors are at a point in their life cycle where replacement is warranted. The existing wall surfaces of painted plaster type material are rough and cracked in many areas. The existing hung ceiling panel ceiling is in need of replacement. The existing vapor resistant lighting system should be replaced with high-efficiency vapor-resistant, enclosed type fixtures, coordinated with the Concessionaire’s new equipment layout.

The roof exhaust fan connected to the existing kitchen hood should be upgraded to provide the needed exhaust capabilities for the Concession area.

The existing conduit mounted electrical outlet boxes standing above the floor in a few locations not only limit the use of the space but also present a hazard to the Concession
employees working around the free standing units in the central section of the work area floor. These outlets could be built into new cabinetwork which would afford additional below counter storage and additional worktop surfaces / small equipment counter placement areas.

Outlining the issues noted above and other items observed during the site visit that would require attention are as follows:

a. Concession floor and base.
b. Wall finishes.
c. Roof mounted exhaust fan with associated roofing.
d. Ceiling system and lighting.
e. Installation of new concession cabinetwork with associated electrical equipment.
f. Installation of Walk-in Refrigerator / Freezer units.
g. Addition of hand wash sinks spaced as per Health Department.
h. Additional floor drains
i. Provision of indirect drains at sinks and equipment drains.
j. Three compartment sink with drain board areas on each side.
k. Provision of GFI type electrical receptacles.
l. Electrical service upgrades to handle equipment needs.
m. ADA access ramp to the Ice Cream Station.
n. Provision of a grease trap for the Concession drain line.

3.07 Camp Pool D

At the south end of the Anthony F. Veteran Park property, the Town owns, maintains, and operates three (3) small pools for use by children’s day camps. The Town designates these pools as Camp Pools D, E, and F, which are used for instruction and general recreation of the day campers. The oldest and most northerly of these pools is Camp Pool D. Constructed prior to the Town acquiring this property, this pool was renovated slightly in 1976.

Camp Pool D is a rectangular poured concrete structure, measuring 40'-0" long x 20'-0" wide. Total pool volume is approximately 21,000 gallons. The pool has a minimum depth of 2'-0" and a maximum depth of 5'-0". System design recirculation flow is 100 gallons per minute (gpm), providing a design turnover rate (TOR) of 3.50 hours.

All wetted surfaces of the pool shell are provided with a white painted finish. Underwater and overhead lighting systems are not provided, therefore night swimming at this pool is prohibited by NYSDOH code regulations.

The pool is directly piped to a small Filter Building located to the east of the pool. This Filter Building serves Camp Pool D only. There is no separate Bathhouse for this pool.
All camp pools are served by a single Bathhouse located immediately to the north of Camp Pool E.

On 09/08/09, an inspection was performed of the pool and amenities, to determine: a) the existing conditions of the pool, decks, piping, and mechanical systems; b) all deficient items; and c) to ascertain the extent of compliance (or non-compliance) with NYSDOH code requirements. In general, Camp Pool D is in a deteriorated condition, including all mechanical/electrical equipment and miscellaneous associated systems.

Photographs of existing conditions, referenced herein, are included in Appendix 5 (for the pool and Filter Building). Following the general format of the Code Compliance Forms provided in Volume 2 of this report, inspection results and deficiencies are listed below in outline format.

**Pool Shell:** Appears to be structurally intact. Paint is cracked and peeling in numerous areas. Coping stones are in generally good condition. Floor slope exceeds allowable maximum (code violation). See Photos CPD-01, 03, & 07.

**Pool Decks:** Concrete decks are very dirty, significantly cracked and settled (code violation), and in poor condition. Wood expansion joints are deteriorated, and missing in areas. Sealant at joints is missing in most locations. See Photos CPD-01, 02, 05, 06, & 08.

Hose bibbs are not provided for washing of decks (code violation). Hose bibbs must be provided with vacuum breakers.

**Ladders:** One (1) at each end. Ladder rails are missing protective rubber cups at bottom.

**Fencing:** Fencing is in fair to poor condition. Single 4’ high gate is not self-closing, self-latching (code violation). Latch handle is not properly located (code violation). See Photo CPD-01.

**Depth Markers:** Deck mounted depth markers are completely illegible (code violation), and are painted (code violation). Depth marker legends are not 4” high minimum (code violation). A few depth marker signs are missing (code violation). See Photos CPD-01, 02, 05, 06, 07, & 08.

**Lifeguard Chairs:** One (1) portable wooden chair provided. Chair is in fair condition.

**Safety Equipment:** Facility lacks face shield with check valve (code violation).

**Lighting:** No U/W or overhead lighting exists. Night swimming is prohibited at this pool.

**Cross Connection:** Air gap is provided on fill line at pool. Backwash line in Filter Bldg. lacks an air gap, and is hard piped to sewer system (code violation).
Backwash System: See "Cross Connection" above (code violation).

Drinking Fountains: None are provided at pool (code violation).

Piping: Valves are neither numbered nor tagged (code violation). Pipes are not color coded (code violation). Some pipes are missing flow arrows and pipe identifications (code violation). See Photos CPD-FB-01, 02, & 03.

Surge Capacity: Existence of skimmers provides 100% "in-pool" surge capacity.

Main Drains: Two (2) – 9" diameter PVC VGBA certified gratings are installed. However, main drain piping is not hydraulically balanced (code violation). See Photo CPD-03.

Strainers: Spare strainer baskets are not provided (code violation).

Gauges: There are no discharge pressure gauges, nor suction compound gauges, on the system (code violation).

Flow Measurement: Flow meter is provided, however meter is inoperable (code violation).

Flow Control: There is no flow control valve on the system (code violation).

Filter: There are no influent/effluent pressure gauges on the HRS filter system (code violation), however a differential pressure gauge is provided at the top of the filter. See Photo CPD-FB-03.

Disinfection Sys: System utilizes calcium hypochlorite [Ca(OCl)₂] tablets, which is in full compliance with code. However, this system is not interlocked with the recirculation pump (code violation). See Photo CPD-FB-01.

pH Control: Town utilizes liquid muriatic acid, however acid is manually poured into the pool, therefore the acid system is not interlocked with the recirculation pump (code violation).

ADA Accessibility: Handicap accessibility is not provided (ADA code violation).


For a more detailed listing of design and construction parameters, and the degree of compliance (or non-compliance) with NYSDOH code requirements, refer to Appendix 4, entitled "Code Compliance Forms – Anthony F. Veteran Pool Facility – Camp Pool D, included in Volume 2 of this report.
3.08 Filter Building (Pool D)

Structure: Structurally intact, but minor repairs are needed. Large crack in stone wall needs repair. Wood frame roof is in good condition. Concrete floor is cracked in a few areas. See Photo CPD-FB-01.

Accessibility: Very limited and difficult. Steps down to operating floor are collapsing and are very dangerous. Bottom of stairs has considerable amount of sediment from soil washouts.

Ventilation: Building has no mechanical ventilation (code violation). Damp, musty odors were present.

Recirculation Pump: Equipment nameplate was completely rusted and illegible. Pump is not secured to concrete floor. See Photo CPD-FB-02.

Filter: Equipment nameplate was completely rusted and illegible.

Lighting: Poor and inadequate (code violation). Light switch was inoperable.

Disinfection: "Pulsar" (calcium hypochlorite) unit mounted on concrete floor. Tubing was improperly and inadequately supported.

Valve Chart: A Valve Operation Chart was not visible (code violation).

Electrical Wiring: Wiring appears to be questionable.

For a more detailed listing of design and construction parameters, and the degree of compliance (or non-compliance) with NYSDOH code requirements, refer to Appendix 4, entitled "Code Compliance Forms – Anthony F. Veteran Pool Facility – Camp Pool D, included in Volume 2 of this report.

3.09 Camp Pool E

Camp Pool E is a rectangular poured concrete structure, measuring 50'-0" long x 25'-0" wide. Total pool volume is approximately 21,100 gallons. The pool has a minimum depth of 1'-6" and a maximum depth of 3'-0". System design recirculation flow is 172 gallons per minute (gpm), providing a design turnover rate (TOR) of 2.04 hours.

All wetted surfaces of the pool shell are provided with a white painted finish. Underwater and overhead lighting systems are not provided, therefore night swimming at this pool is prohibited by NYSDOH code regulations.

The pool is directly piped to a Filter Building located to the south of adjacent Camp Pool F. This Filter Building serves both Camp Pool E and F. There is no separate Bathhouse for this pool. All camp pools are served by a single Bathhouse located immediately to the north of Camp Pool E.

On 09/08/09, an inspection was performed of the pool and amenities, to determine: a) the existing conditions of the pool, decks, piping, and mechanical systems; b) all
deficient items; and c) to ascertain the extent of compliance (or non-compliance) with NYSDOH code requirements. In general, Camp Pool E is in fair to good condition, including all mechanical/electrical equipment and miscellaneous associated systems.

Photographs of existing conditions, referenced herein, are included in Appendix 6 (for the pool) and Appendix 8 (for the Filter Building). Following the general format of the Code Compliance Forms provided in Volume 2 of this report, inspection results and deficiencies are listed below in outline format.

**Pool Shell:** Appears to be structurally intact. Paint is in good condition. Coping stones are cracked and broken in numerous locations. Some areas have been patched with concrete. See Photos CPE-04, 05, 06, & 08.

**Pool Decks:** Concrete decks are dirty, but in good condition. Sealant is missing at expansion joints in some areas. See Photo CPE-05.

One (1) common hose bibb is provided near Camp Pool E, however hose bibb is not provided with a vacuum breaker (code violation).

**Stairs & Ladders:** There are two (2) sets of "pie-shaped" stairs, in fair condition, at the shallow end, and one (1) ladder at the deep end.

**Fencing:** 4' high fencing is in fair condition. Fabric does not extend over top rail (code violation). Clearance from bottom of fence to grade exceeds maximum allowable value (code violation). See Photo CPE-03.

**Depth Markers:** Continuous tile band is in very poor condition and requires complete replacement. Tiles are broken, missing, and mismatched (code violation). Attempts have been made to repair deteriorated areas. A few depth marker signs are missing (code violation). See Photos CPE-05, 06, & 10.

**Safety Equipment:** Facility lacks face shield with check valve (code violation).

**Lighting:** No U/W or overhead lighting exists. Night swimming is prohibited at this pool.

**Cross Connection:** Air gap is provided on fill line at pool. See Photo CPE-07.

**Piping:** Some pipes are not color coded (code violation). Some pipes are missing flow arrows and pipe identifications (code violation). See Photos CPEF-FB-01, 04, 07, & 08.

**Surge Capacity:** Existence of skimmers provides 100% "in-pool" surge capacity.

**Main Drains:** Two (2) – 12" x 12" PVC VGBA certified gratings are installed. Main drain piping is hydraulically balanced. See Photo CPE-09.
Strainers: Spare strainer baskets are not provided (code violation).

Gauges: There is a compound gauge on the suction line, however it is inoperable (code violation).

Filter: Influent/effluent pressure gauges are provided on the HRS filter system, however both are inoperable (code violation). See Photo CPEF-FB-05.

Disinfection Sys: System utilizes liquid sodium hypochlorite (NaOCl). However, this system is not interlocked with the recirculation pump (code violation).

pH Control: Town utilizes liquid muriatic acid, however the acid system is not interlocked with the recirculation pump (code violation).

ADA Accessibility: Handicap accessibility is not provided (ADA code violation).


For a more detailed listing of design and construction parameters, and the degree of compliance (or non-compliance) with NYSDOH code requirements, refer to Appendix 5, entitled “Code Compliance Forms – Anthony F. Veteran Pool Facility – Camp Pool E, included in Volume 2 of this report.

3.10 Camp Pool F

Camp Pool F is a rectangular poured concrete structure, measuring 50'-0" long x 25'-0" wide. Total pool volume is approximately 37,500 gallons. The pool has a minimum depth of 3'-6" and a maximum depth of 4'-6". System design recirculation flow is 188 gallons per minute (gpm), providing a design turnover rate (TOR) of 3.32 hours.

All wetted surfaces of the pool shell are provided with a white painted finish. Underwater and overhead lighting systems are not provided, therefore night swimming at this pool is prohibited by NYSDOH code regulations.

The pool is directly piped to a Filter Building located immediately to the south. This Filter Building serves both Camp Pools E and F. There is no separate Bathhouse for this pool. All camp pools are served by a single Bathhouse located immediately to the north of Camp Pool E.

On 09/08/09, an inspection was performed of the pool and amenities, to determine: a) the existing conditions of the pool, decks, piping, and mechanical systems; b) all deficient items; and c) to ascertain the extent of compliance (or non-compliance) with NYSDOH code requirements. In general, Camp Pool F is in fair to good condition, including all mechanical/electrical equipment and miscellaneous associated systems.

Photographs of existing conditions, referenced herein, are included in Appendix 7 (for the pool) and Appendix 8 (for the Filter Building). Following the general format of the
Code Compliance Forms provided in Volume 2 of this report, inspection results and deficiencies are listed below in outline format.

Pool Shell: Appears to be structurally intact. Paint is in good condition. Coping stones are generally in good condition. See Photos CPF-01, 02, & 03.

Pool Decks: Concrete decks are dirty, but in fair to good condition. Sealant is not continuous around pool at coping. Sealant is deteriorating and is missing at expansion joints in some areas. There is an unknown conduit or pipe protruding vertically through the deck at a corner of the pool (code violation). This protrusion is a serious safety hazard. See Photos CPF-01, 02, 03, & 04.

One (1) common hose bibb is provided near Pool, however hose bibb is not provided with a vacuum breaker (code violation).

Ladders: One (1) ladder each is provided at the shallow and deep ends. Ladders are in fair condition.

Fencing: 4’ high fencing is in fair condition. Fabric does not extend over top rail on perimeter fence (code violation). Clearance from bottom of fence to grade exceeds maximum allowable value (code violation).

Depth Markers: Deck mounted depth markers are painted, extremely worn, and barely legible (code violation). “NO DIVING” markers are not provided (code violation). Spacing exceeds 25’ on centers (code violation). Markings are not 4” high minimum (code violation). Some depth marker signs are missing (code violation). See Photos CPF-01, 02, 03, 04, & 06.

Safety Equipment: Facility lacks face shield with check valve (code violation).

Lighting: No U/W or overhead lighting exists. Night swimming is prohibited at this pool.

Cross Connection: Air gap is provided on fill line at pool. See Photo CPF-04.

Piping: Valves are not numbered and tagged (code violation).
Some pipes are not color coded (code violation).
Some pipes are missing flow arrows and pipe identifications (code violation). See Photos CPEF-FB-01, 04, 05, 07, & 08.

Surge Capacity: Existence of skimmers provides 100% “in-pool” surge capacity.

Main Drains: Only one (1) – 12” x 12” PVC VGBA certified grating is installed (code violation). There is no secondary safety feature (e.g. – Safety Vacuum Release System) installed (CPSC code violation). This is a very dangerous condition, and should be corrected
immediately. A safety vacuum release system (SVRS) has been ordered by Town personnel. See Photo CPF-05.

Strainers: Spare strainer baskets are not provided (code violation)

Gauges: Pump suction and pressure gauges are provided, however they are both inoperable (code violation). See Photo CPEF-FB-04.

Filter: Influent/effluent pressure gauges are not provided on the HRS filter system (code violation). An air relief valve is provided at the top of the filter, however the valve is inoperable (code violation). See Photo CPEF-FB-07.


Disinfection Sys: System utilizes liquid sodium hypochlorite (NaOCl). However, this system is not interlocked with the recirculation pump (code violation).

pH Control: Town utilizes liquid muriatic acid, however the acid system is not interlocked with the recirculation pump (code violation). Acid is manually poured into the pool (code violation).

ADA Accessibility: Handicap accessibility is not provided (ADA code violation).


For a more detailed listing of design and construction parameters, and the degree of compliance (or non-compliance) with NYSDOH code requirements, refer to Appendix 6, entitled "Code Compliance Forms – Anthony F. Veteran Pool Facility – Camp Pool F", included in Volume 2 of this report.

3.11 Bathhouse/Sanitary Facilities (Pools D, E, F)

Camp Pools D, E, and F use a common Bathhouse, located just north of Camp Pool E. In general, except as noted further herein, Bathhouse construction is in conformance with NYSDOH and NYS Building Codes. The Men's Room is provided with two (2) water closets, three (3) urinals, and three (3) lavatories. The Women's Room is provided with five (5) water closets and three (3) lavatories. Showers, dressing rooms, and service sinks are not provided. No hose bibbs are provided (code violation) and there is one (1) exterior drinking fountain mounted on a common wall of the Bathhouse.

Patrons do not pass through the Bathhouse before entering the pools (code violation). However, health departments typically overlook this infraction, if patrons have reasonable access to Bathhouses upon entering the facility.

To determine the required amount of sanitary fixtures, as dictated by recently revised NYS Building Codes, the total combined Design Bather Capacity (DBC) must be calculated for all three (3) Camp Pools.
As per NYSDOH code requirements, the DBC of a pool facility is calculated by
determining the maximum allowable quantity of bathers based on pool area, plus the
maximum allowable quantity of bathers based on an "excess deck allowance". At the
Anthony F. Veteran Pools, combining all pool and deck areas for Camp Pools D, E, and
F results in a total DBC of 278 bathers. Of this total, the NYS Building Code assumes
50% (139) male and 50% (139) female bathers.

Based on these quantities, and the existing total quantity of sanitary fixtures (e.g. – water
closets, urinals, lavatories, drinking fountains, and service sinks), inspection results
indicate that this portion of the pool facility meets or exceeds code requirements for
sanitary fixtures, however by code, a service sink is required in each bathroom.

Therefore, if total cumulative pool and deck areas are not increased in the future,
additional sanitary fixtures will not be required, with the exception of the service sinks.
However, if additional pools and/or deck areas are constructed, additional sanitary
fixtures may be required.

3.12  Filter Building (Pools E & F)

Photographs of existing conditions, referenced herein, are included in Appendix 8 of this
volume. Following the general format of the Code Compliance Forms provided in
Volume 2 of this report, inspection results and deficiencies are listed below in outline
format.

Structure: Stone wall construction with wood frame roof. Walls need
considerable repair. Structural integrity of north side wall is
questionable. See Photos CPEF-FB-01, 02, & 03.

Building is disorganized. Many items are stored on ceiling joists,
and protrude down from the ceiling (safety violation). Debris and
garbage are located throughout the building. Conduit and pipes
on floor create unsafe conditions. Pool supplies are poorly
stacked. Open bags of sodium bicarbonate are present. See
Photo CPEF-FB-01.

Ventilation: Building is not provided with mechanical ventilation (code
violation). Atmosphere is hot and humid. Original window
openings are covered by plywood.

Lighting: Lighting is poor and inadequate.

Cross Connection: A reduced pressure zone (RPZ) backflow preventer is provided in
the Filter Bldg. The "dump port" of the RPZ is blocked by a wood
2" x 4" support (code violation). See Photo CPEF-FB-06.

There are two (2) hose bibbs in the room, however vacuum
breakers are not provided at the hose bibbs (code violation).

Valve Chart: Valve operation charts are not provided for either pool (code
violation).
Eyewash/Shower: Blocked by debris and poorly located (code violation). See Photo CPEF-FB-11.

Pumps: Appear old and rusting. Gauges are rusted. Gauge glasses are broken. Some gauges are inoperable (code violation).

Pipe & Valves: Piping is not adequately supported (code violation). Some supports are missing (code violation). Valves for Camp Pool F are old and deteriorating. Operation of valves is questionable. See Photos CPEF-FB-01, 03, 04, 06, & 08.

NaOCl System: Entire hypochlorite system is in violation of codes. There is unsecured tubing, unsealed openings, no secondary containment, and no overfill or leak alarm systems (all NYSDEC code violations). See Photos CPEF-FB-02, 03, & 10.

Electrical: Panels in good condition. Some wiring for lighting system is not installed in conduit (NEC code violation). Wiring is installed on ceiling ties.

For a more detailed listing of design and construction parameters associated with this Filter Building, and the degree of compliance (or non-compliance) with NYSDOH code requirements, refer to the Code Compliance Forms, in Appendix 5 (Camp Pool E) or Appendix 6 (Camp Pool F), included in Volume 2 of this report.
4.01 Training Pool

The Training Pool is a rectangular shaped poured concrete shell, measuring 50'-0" long x 30'-0" wide. Total pool volume is approximately 39,700 gallons. The pool has a minimum depth of 3'-0", and a maximum depth of 4'-3". System design recirculation flow is 165 gallons per minute (gpm), providing a design turnover rate (TOR) of 4.0 hours.

All wetted surfaces of the pool shell are provided with a white painted finish. Underwater lighting systems are not provided. Overhead safety lighting is provided for security purposes only. Therefore, night swimming at this pool is prohibited by NYSDOH code regulations.

The pool is directly piped to a small Filter Room, located within a separate Bathhouse structure, immediately north of the pool. This Bathhouse/Filter Building serves the Training Pool and the adjacent Wading Pool.

On 09/30/09, an inspection was performed of the pool and amenities, to determine: a) the existing conditions of the pool, decks, piping, and mechanical systems; b) all deficient items; and c) to ascertain the extent of compliance (or non-compliance) with NYSDOH code requirements. In general, the Training Pool is in fair to average condition, including all mechanical/electrical equipment and miscellaneous associated systems.

Photographs of existing conditions, referenced herein, are included in Appendix 9 (for the pool) and Appendix 11 (for the Filter Building). Following the general format of the Code Compliance Forms provided in Volume 2 of this report, inspection results and deficiencies are listed below in outline format.

**Pool Shell:** Structural integrity appears intact. Paint appears adequate, but needs “touch-up”.

**Turnover Rate:** TOR is at the maximum permissible value (4.0 hours). A clogged or dirty filter will result in an excessive TOR > 4.0 hours (code violation).

**Coping:** Coping stones are in good condition. No cracking or lifting was evident. See Photo TP-06.

**Ladders:** Provided with one (1) each at shallow and deep ends. In good condition.

**Concrete Decks:** Decks are deteriorating and require complete replacement. Expansion joints and sealant are damaged and missing in many locations, and require replacement. See Photos TP-03, 07, & 08.

There is a 24" x 24" (+/-) drain grating installed flush with the deck, located between the pool and Bathhouse. Grate openings are
much larger than the 1/2" maximum allowed by code (code and safety violation). See Photo TP-01.

Hose bibbs are not provided at pool for cleaning of decks (code violation).

Fencing & Gates: Chain link entry gates are not self-closing, self-latching (code violation). Latch handles are less than 40" above finished grade (code violation). See Photo TP-02.

8' high perimeter chain link fencing is in average condition, and needs repair or replacement. See Photo TP-02.

Depth Markers: On sides of pool, depth markers exceed the maximum 25' allowable spacing (code violation). Deck mounted depth markers are painted (code violation). See Photo TP-04.

Plastic depth marker signs are in good condition. See Photo TP-05.

Electrical Wires: Phone & CATV wires pass over the northeast corner of the pool (code violation).

Fill Spout: Fill spout is provided at pool, but requires a protective cover at the pipe end (safety violation). See Photo TP-06.

Piping & Valves: Valves are neither numbered, nor tagged (code violation). Pipes are not properly supported (code violation). Some pipes are not properly color coded, and are not provided with flow arrows and pipe identification (code violation). See Photos FB-01, 02, 04, & 05.

Surge Capacity: Presence of skimmers provides 100% "in-pool" surge capacity.

Skimmers: The flow rate at each skimmer is less than the minimum 30 gpm allowed by code (code violation). With six (6) skimmers and a recirculation flow rate of 165 gpm, the flow at each skimmer = 165/6 = 27.5 gpm/skimmer.

Main Drains: Main drain piping is not hydraulically balanced (code violation).

Strainers: Spare strainer baskets are not provided (code violation).

Pump Gauges: Compound gauges on suction lines, and pressure gauges on discharge lines, are not provided (code violation). See Photo FB-05.

Flow Control: A flow control valve is not provided (code violation).
Return Inlets: Piping is “looped” but is downsized from one (1) - 3" pipe to two (2) - 2.5" pipes (code violation). Inlets are not flow rate adjustable, nor are they directional (code violation).

Disinfection Sys: Utilizes calcium hypochlorite [Ca(OCl)2] tablets, however system is not interlocked with the recirculation pump (code violation).

pH Control: Utilizes liquid muriatic acid, however acid is manually poured into pool. Thus, system is not interlocked with the recirculation pump (code violation).


ADA Accessibility: Handicap accessibility is not provided at the pool (ADA code violation).

For a more detailed listing of design and construction parameters, and the degree of compliance (or non-compliance) with NYSDOH code requirements, refer to Appendix 7, entitled "Code Compliance Forms – Massaro Park Pool Facility – Training Pool, included in Volume 2 of this report.

4.02 Wading Pool

The Wading Pool is an oval shaped poured concrete shell, measuring 24'-0" long x 16'-0" wide. In June of 1992, modifications were constructed at this pool to include a "Rain Drop" umbrella type spray feature, bottom bubblers, and deck sprays.

Total pool volume is approximately 1,335 gallons. The pool has a minimum depth of 0'-8", and a maximum depth of 1'-3". System design recirculation flow is an estimated 140 gallons per minute (gpm), providing an estimated design turnover rate (TOR) of 0.16 hours.

All wetted surfaces of the pool shell are provided with a white painted finish. Underwater lighting systems are not provided. Overhead safety lighting is provided for security purposes only. Therefore, night swimming at this pool is prohibited by NYSDOH code regulations.

The pool is directly piped to a small Filter Room, located within a separate Bathhouse structure, immediately north of the Training Pool. This Bathhouse/Filter Building serves the Training Pool and the Wading Pool.

On 09/30/09, an inspection was performed of the pool and amenities, to determine: a) the existing conditions of the pool, decks, piping, and mechanical systems; b) all deficient items; and c) to ascertain the extent of compliance (or non-compliance) with NYSDOH code requirements. In general, the Wading Pool is in poor to fair condition, including all mechanical/electrical equipment and miscellaneous associated systems.

Photographs of existing conditions, referenced herein, are included in Appendix 10 (for the pool) and Appendix 11 (for the Filter Building). Following the general format of the
Code Compliance Forms provided in Volume 2 of this report, inspection results and deficiencies are listed below in outline format.

Pool Shell: Structural integrity appears intact, however pool floor is very uneven and rough (code violation). Portions of the floor have been demolished and replaced in recent years. Floor slope is inconsistent (code violation). Paint appears adequate, but needs "touch-up".

Wall-to-floor intersections are not rounded (code violation). See Photo WP-06.

Coping: A few coping stones are cracked, lifted, and/or loose (code violation). Visually, coping does not appear to be level (code violation). Grout is completely missing in areas (code violation). Stones require replacement. See Photo WP-06.

Stairs: Located at shallow end with railing, all in good condition. Railing is loose at deck anchor.

Concrete Decks: Decks are spalling, cracking, settling, eroding, and need complete replacement (code violation). Expansion joints and sealant are damaged and missing in many locations, and require replacement. See Photos WP-03 & 04.

There is a 24" x 24" (+/-) drain grating installed flush with the deck, located between the pool and Bathhouse. Grate openings are much larger than the 1/2" maximum allowed by code (code and safety violation). See Photo WP-02.

Hose bibbs are not provided at pool for cleaning of decks (code violation).

Fencing & Gates: Chain link entry gates are not self-closing, self-latching (code violation). Latch handles are less than 40" above finished grade (code violation). See Photo WP-01.

8' high perimeter chain link fencing is in average condition, and needs repair or replacement.

Depth Markers: Deck mounted markers are continuous bands of 1" x 1" non-slip tile. Numerous areas are cracked and broken with sharp edges (code violation). Isolated areas have been filled with grout, obliterating the depth marker legend (code violation). Needs complete replacement. See Photos WP-03, 04, 05, & 06.

Plastic depth marker signs are in good condition.

Fill Spout: Pool is filled via Equalization Line between the Training & Wading Pools.
Piping & Valves: Valves are neither numbered, nor tagged (code violation). Pipes are not properly supported (code violation). Some pipes are not properly color coded, and are not provided with flow arrows and pipe identification (code violation). See Photos FB-01, 02, 04, & 05.

Surge Capacity: Presence of skimmers provides 100% “in-pool” surge capacity.

Main Drains: Main drain piping is not hydraulically balanced (code violation). Portions of main drain piping are undersized (code violation).

Strainers: Spare strainer baskets are not provided (code violation).

Pump Gauges: Compound gauges on suction lines, and pressure gauges on discharge lines, are not provided (code violation). See Photo FB-05.

Flow Control: A flow control valve is not provided (code violation).

Return Inlets: Floor inlets are not flow rate adjustable (code violation).

Filters: Influent/effluent gauges are not provided on filters (code violation), although differential gauges are mounted on each filter. See Photo FB-02.

Disinfection Sys: Utilizes liquid sodium hypochlorite (NaOCl), however system is not interlocked with the recirculation pump (code violation).

pH Control: Utilizes liquid muriatic acid, however acid is manually poured into pool. Thus, system is not interlocked with the recirculation pump (code violation).


ADA Accessibility: Handicap accessibility is not provided at the pool (ADA code violation).

Special Notes: In addition to chemical disinfection, recent NYSDOH code revisions require the installation of certified ultraviolet (UV) disinfection systems at spray play areas and pools with spray features. No UV system is installed at the Wading Pool. If any revisions are made to this pool system, a UV system will be required by code.

For a more detailed listing of design and construction parameters, and the degree of compliance (or non-compliance) with NYSDOH code requirements, refer to Appendix 8, entitled “Code Compliance Forms – Massaro Park Pool Facility – Wading Pool, included in Volume 2 of this report.
4.03 Bathhouse/Sanitary Facilities

The Training and Wading Pools are served by a common Bathhouse, located just north of the Training Pool. In general, except as noted further herein, Bathhouse construction is in conformance with NYSDOH and NYS Building Codes. The Men’s Room is provided with one (1) water closet, one (1) urinal, and two (2) lavatories. The Women’s Room is provided with two (2) water closets and two (2) lavatories. Showers, dressing rooms, and service sinks are not provided. No hose bibs are provided (code violation) and there is one (1) exterior drinking fountain mounted on a common wall of the Bathhouse.

Patrons do not pass through the Bathhouse before entering the pools (code violation). However, health departments typically overlook this infraction, if patrons have reasonable access to Bathhouses upon entering the facility.

To determine the required amount of sanitary fixtures, as dictated by recently revised NYS Building Codes, the total combined Design Bather Capacity (DBC) must be calculated for both pools.

As per NYSDOH code requirements, the DBC of a pool facility is calculated by determining the maximum allowable quantity of bathers based on pool area, plus the maximum allowable quantity of bathers based on an "excess deck allowance". At the Massaro Park Pools, combining all pool and deck areas for the Training and Wading Pools results in a total DBC of 162 bathers. Of this total, the NYS Building Code assumes 50% (81) male and 50% (81) female bathers.

Based on these quantities, and the existing total quantity of sanitary fixtures (e.g. – water closets, urinals, lavatories, drinking fountains, and service sinks), inspection results indicate that this facility does not meet or exceed code requirements for sanitary fixtures. By code, one (1) service sink is required in the Men’s Room, and one (1) water closet and one (1) service sink are required in the Women’s Room.

Therefore, if total cumulative pool and deck areas are not increased in the future, additional sanitary fixtures will be required as detailed above. However, if additional pool and/or deck areas are constructed, additional sanitary fixtures may be required.

4.04 Filter Building

Photographs of existing conditions for the Filter Building, referenced herein, are included in Appendix 11. Following the general format of the Code Compliance Forms provided in Volume 2 of this report, inspection results and deficiencies are listed below in outline format.

Structure: Filter Room is very congested, with little open space available. Room is dry, but requires increased levels of mechanical ventilation.

Hose Bibbs: Vacuum breakers are missing on hose bibbs (code violation).

Water Service: Incoming water line and isolation valve are severely rusted and corroded. Requires replacement. See Photo FB-03.
Cross Control: There is no RPZ on the water line, however there is a Pressure Vacuum Breaker (PVB) on a smaller secondary feed line.

Auto Systems: There is no automatic chemical controller for either pool (code violation). Systems are adjusted manually by Town personnel (code violation).

Containment: Chemical tanks are not contained, tank openings are unsealed, and no alarm panels are provided (all NYSDEC code violations). See Photo FB-06.

Feature System: All flows to features pass through the filter system for the W.P.

Valve Chart: A Valve Operation Chart is not provided for either pool (code violation).

Electrical Panels: Panels are in good condition. No corrosion or rusting is evident.

For a more detailed listing of design and construction parameters associated with the Filter Building, and the degree of compliance (or non-compliance) with NYSDOH code requirements, refer to Code Compliance Forms, Appendix 7 (Training Pool) or Appendix 8 (Wading Pool), included in Volume 2 of this report.
5.00 RECOMMENDED IMPROVEMENTS
ANTHONY F. VETERAN POOL FACILITY

5.01 Special Notes Regarding Bottom Inlets

The most recent NYSDOH code requirements mandate that all pools greater than 60’ in width must be provided with bottom inlets. With the exception of recessed stairs, the installation of wall mounted inlets is not permitted for pools greater than 60’ in width. Although the NYSDOH allows wall mounted inlets in pools less than 60’ wide, the WCHD prefers that wall inlets be installed in pools less than 30’ wide only. If an existing or new pool is between 30’ and 60’ wide, the WCHD offers two (2) options to the Owner, as follows.

1. Install wall inlets, however, in order to obtain WCHD approval of the completed facility, the affected pool must pass a “Star Test” and a separate “Dye Test”. If either test fails, the WCHD will not approve the construction, and will not permit the pool to open to the public, until further modifications are made and the situation is rectified. Oftentimes, the additional modifications needed to rectify the failed tests are prohibitively expensive.

2. Install bottom inlets throughout the pool. With this option, “Star & Dye Tests” are not required for WCHD approval.

The “Star Test” includes randomly and evenly placing 150 flat, silver dollar sized, plastic stars throughout the surface of the pool. The stars float on the surface and are gently directed to skimmers or perimeter overflow gutters via the pool recirculation system. With the recirculation system fully operational, the stars are tossed into the pool by WCHD personnel, and the test is started. In order to obtain successful test results, at least 95% of the stars (which equates to at least 143 units) must reach and touch skimmers or perimeter gutter systems within 60 minutes. The test is conducted once only. If the test fails, the pool cannot be operated by the Owner.

To further verify the adequacy of the recirculation system, and to ensure that there are no “dead spots” in the pool, the WCHD also performs a “Dye Test”. The “Dye Test” includes the introduction of crystal violet dye into the recirculation system (usually via the Balance or Surge Tank). Before introducing the dye into the system, chlorine levels in the pool must be reduced to 0.0 parts per million (ppm). Once the dye is introduced into the system, the first part of this test is started. In order to obtain successful test results, the entire volume of water in the pool must change to an even, homogenous, dark blue or violet color within 60 minutes. Inconsistent color levels in the pool, or areas that do not change color within the time frame, will constitute failure of the test.

To successfully complete the second part of the “Dye Test”, while the water is still dark blue or violet, the system is superchlorinated to approximately 10 ppm. Superchlorination completely destroys the dye and returns the water to its natural state. Once the chlorine is added to the system, the test is started. To achieve successful results, all remnants of the dye must be completely destroyed within 60 minutes. If areas of the pool exhibit residual amounts of dye after the 60 minute test period, the test is considered to have failed.
As with the “Star Test”, the “Dye Test” is performed once only. If either part of the “Dye Test” fails, the WCHD will mandate closure of the pool to the public.

Due to the stringent nature of these tests, and the potential of pool closure if tests fail, many municipalities choose to install bottom inlets. If a decision is made to install wall inlets, thus mandating “Star & Dye Tests”, a very detailed investigation and analysis must be made of the recirculation and inlet systems, to mitigate the potential for test failures. For pool shapes other than simple squares or rectangles, a detailed analysis is often difficult, and does not guarantee successful test results.

5.02 Main Pool

Years ago, the Town experienced problems with deteriorating concrete on the upper portion of the walls of the Main Pool. To rectify the situation without having to remove and replace the walls, a spray-applied fiberglass lining was installed on all surfaces of the pool. However, in recent years, the fiberglass lining has required numerous repairs on an increasingly frequent schedule. Therefore, based on the recent experiences of the Town, the apparent structural integrity of portions of the Main Pool shell, and the prohibitive cost to replace the pool in its entirety, recommendations are included herein (in outline format) for repairs, modifications, and general improvements to the pool and pool systems.

To ensure code compliance with recent NYSDOH requirements, and the continued safety and enjoyment of bathers at this pool, it is recommended to perform the following improvements.

1. Demolish the upper portion of all concrete walls, including the perimeter gutter system. Maintain the lower portion of pool walls in the swimming area.

2. Demolish the entire floor slab of the swimming pool and diving hopper. Maintain the lower portion of the existing walls in the diving hopper.

3. Using the existing pool walls as a form, pour new concrete walls, along the entire inner perimeter of the existing pool.

4. To provide “in-pool” surge capacity, rather than relying on the Balance (Surge) Tank, provide stainless steel gutters with surge weirs. The elevation of the stainless steel gutters should match the elevation of the existing pool coping. In lieu of stainless steel gutters, adequately sized concrete perimeter gutters could be installed, where 100% of the required surge capacity would be provided in the gutters.

5. Install new return piping headers, under the new pool floor, for the entire footprint of the pool. Install new floor mounted bottom inlets, flush with the new finished floor, throughout the pool. Install additional wall mounted inlets at all recessed steps. Installation of bottom inlets will eliminate the need for “Star & Dye Tests”.

5-2
6. Install new main drains and main drain piping in the diving hopper, as required by code. Re-install existing stainless steel VGBA certified main drain gratings (if possible).

7. Pour a new concrete floor slab, for all swimming areas and the diving hopper.

8. Paint the entire new pool shell with epoxy paint (white).

9. Demolish diving stands and boards, and install two (2) new stands and boards, properly located.

10. Replace all railings, ladders, lifeguard chairs, and miscellaneous deck equipment around the entire pool.

11. Replace the fill spout at the pool, or preferably, re-pipe the fill spout to the modified existing Balance Tank.

12. Replace all piping to and from the pool and Filter Building.

13. Replace all concrete pool decks around the pool. Reduce all deck widths from 25' wide (+/-) to 10' wide.

14. Slope all concrete decks away from the pool.

15. Provide new ADA lifts (one at each end of the swimming areas) for primary handicap access, and transfer tiers (for use at concrete pool steps) for secondary handicap access, as required by ADA regulations.

16. Provide new, individual, pre-manufactured, non-slip tile, deck mounted depth markers. Install 6" x 6" or 8" x 8" tiles in deck recesses. Install individual "No Diving" tile markers utilizing the industry accepted icon graphic. Install additional vertically mounted depth marker signs, as needed.

17. Demolish the top slab of the existing Balance Tank.

18. Pour a new separation wall within the existing Balance Tank, to isolate Main Pool flows from Adult Pool flows, within the tank.

19. Modify and replace all Main Pool pipe, valves, fittings, etc. at the modified Balance Tank. Install a new automatic liquid level control (LLC) pipe from the Balance Tank to the new Filter Building.

20. Install a new concrete top slab on the Balance Tank, with minimum 30" x 30" aluminum access hatches, to provide access to each portion of the Balance Tank.

21. In lieu of diatomaceous earth, install a new type of filter system. Consider rapid or high rate sand filters, regenerative filters utilizing "Perlite", or similar systems.
22. In lieu of tablet or liquid chlorination systems, consider the use of salt water chlorine generating systems. With these systems, a minimal quantity of salt (NaCl) is the only component added to the pool. The salt in the pool water is converted to chlorine in the Filter Building, which disinfects the pool, and returns to a salt for the next cycle. There are no agency regulations restricting the transportation and storage of salt.

23. Repair fencing, and replace gate hardware, as needed, to ensure that gates are self-closing and self-latching.

24. Underwater lights are not recommended. Site security lighting should be maintained and/or upgraded for safety.

5.03 Adult Pool

In recent years, the fiberglass liner inside this pool has deteriorated at a slower rate than the liner in the Main Pool. However, the Adult Pool appears to have maintained its structural integrity. Due to the special uses of this pool (e.g. – competitive swimming and handicap access), and the code requirements of the NYSDOH and the WCHD, it does not appear to be logistically or economically feasible to modify this pool.

As a competitive pool, starting platforms are provided at the deep end of the structure. However, as per code, the minimum pool depth at starting platforms must be 6'-0". The existing pool depth at these platforms is 4'-9". In order to continue the use of starting platforms, the depth of the pool would have to be increased by at least 1'-3". This increase in pool depth is very costly, and poses numerous logistical problems.

Similar to the Main Pool, the main drains and main drain piping in the Adult Pool will require replacement, and floor mounted return inlets (throughout the entire pool) will be mandated by the WCHD, unless the Town elects to install wall inlets and perform “Star & Dye Tests”. Again, this is a very costly process that creates numerous logistical problems.

Based on the above, it is recommended to demolish the Adult Pool in its entirety, and construct a new, similarly sized pool, as follows.

1. Demolish the existing pool in its entirety and construct a completely new pool, 56'-0" wide x 82'-1" long, with water depths at the end walls of approximately 3'-6" to 4'-0" at the shallow end, and 6'-0" at the deep end. Water depth at the main drains should be about 6'-3". To provide "in-pool" surge capacity, rather than relying on the Balance (Surge) Tank, install continuous stainless steel perimeter gutters provided with surge weirs, or adequately sized concrete gutters provided with 100% surge capacity.

2. Construct a new ADA ramp into the pool, incorporating a flat landing at the mid-point of the ramp, as required by ADA codes.

3. Provide bottom floor inlets throughout the pool. Construct new main drains and replace all main drain piping, as per NYSDOH and VGBA
requirements. Replace existing VGBA main drain covers, if possible. Installation of bottom inlets will eliminate the need for “Star & Dye Tests”.

4. At the shallow (3'-6" to 4'-0" deep) end of the pool, in the southwest corner, provide a 6' wide x 10' long “bumpout” in the pool wall, to serve as a “seating area” for elderly patrons. Install wall mounted return inlets at the seating area, as well as at all recessed steps.

5. Provide recessed steps at both sides of pool.

6. Paint the entire pool shell with epoxy paint (white).

7. Replace all concrete decks around the pool. To reduce the area (and cost) of concrete decks, install decks with a maximum width of 10' (+/-). Slope all decks away from the pool.

8. Install all new deck equipment, including ladders, railings, starting platforms, lifeguard chairs, etc.

9. Install a new makeup water system feeding into the existing modified Balance Tank.

10. Install all new piping to and from the pool and Balance Tank and/or Filter Building.

11. Provide a new transfer tier (for use at concrete pool steps), or a handicap lift, for secondary handicap access, as required by ADA regulations.

12. Provide new, individual, pre-manufactured, non-slip tile, deck mounted depth markers. Install 6" x 6" or 8" x 8" tiles in deck recesses. Install individual “No Diving” tile markers utilizing the industry accepted icon graphic. Install additional vertically mounted depth marker signs, as needed.

13. Demolish the top slab of the existing Balance Tank.

14. Pour a new separation wall within the existing Balance Tank, to isolate Main Pool flows from Adult Pool flows, within the tank.

15. Install a new concrete top slab on the Balance Tank, with minimum 30" x 30" aluminum access hatches, to provide access to each portion of the Balance Tank.

16. Modify and replace all Adult Pool pipe, valves, fittings, etc. at the modified Balance Tank. Install a new automatic liquid level control (LLC) pipe from the Balance Tank to the new Filter Building.

17. In lieu of diatomaceous earth, install a new type of filter system. Consider rapid or high rate sand filters, regenerative filters utilizing “Perlite”, or similar systems. Provide a filter system Turnover Rate (TOR) of approximately 5.5 hours.
18. In lieu of tablet or liquid chlorination systems, consider the use of salt water chlorine generating systems. With these systems, a minimal quantity of salt (NaCl) is the only component added to the pool. The salt in the pool water is converted to chlorine in the Filter Building, which disinfects the pool, and returns to a salt for the next cycle. There are no agency regulations restricting the transportation and storage of salt.

19. Repair fencing, and replace gate hardware, as needed, to ensure that gates are self-closing and self-latching.

20. Underwater lights are not recommended. Site security lighting should be maintained and/or upgraded for safety.

5.04 Interactive Pool

Since the Interactive Pool was recently designed and constructed (in June/2004), the pool is in conformance with most NYSDOH code requirements. In general, all systems for this pool are in operable condition, and very few improvements are required.

The Interactive Pool includes a small wading area for toddlers, and a shallow swimming area at the deep end for small children. A large Interactive Play Structure is located in the middle of the pool, and numerous spray features are located throughout the pool.

Although this pool is provided with spray features, since it is a pool (as opposed to a spray ground), the installation of an ultraviolet (UV) system is not required by Code. At spray ground facilities, a UV disinfection system is required by Code to be installed in addition to standard chlorine disinfection systems.

As of January 2007, UV disinfection is now mandated at spray ground facilities in order to destroy cryptosporidium (a water borne virus), which causes severe stomach disorders, and death in some cases. Although chlorine systems are extremely potent in destroying water borne parasites, they cannot destroy the cryptosporidium virus. UV disinfection destroys the virus in a single pass through the system.

It should be noted however, that the NYSDOH has recently considered mandating UV disinfection for pools with spray features. Although no revisions have been made to the Code in this regard, the installation of a UV system at this pool may possibly be required in the future.

To ensure complete conformance with code requirements, and to promote more safe and efficient operation, the following recommendations are proposed for modifications to this pool.

1. Install hose bibs around the pool for cleaning and flushing of concrete decks around the pool. Provide backflow prevention devices on hose bibs.

2. Replace fencing and gates at pool, as needed. Provide fencing with 1" (non-climbable) mesh.
3. Install VGBA certified main drain gratings or covers (currently on order by Owner).

4. Provide a transfer tier (for use at pool steps) to provide secondary ADA access to the pool. Primary ADA access is provided by a ramp at the shallow end of the pool.

5. Replace missing safety pads at Interactive Play Structure flanges.

5.05 Slide Pool

In order to provide a more varied experience at this facility, for youngsters and adults alike, the installation of a Slide Pool is proposed. The Slide Pool would be a “stand alone” structure located to the northwest of the existing Main Pool. The pool would measure 15’ wide x 20’ long, with depths ranging from 3’-0” (minimum) at the walls to approximately 3'-6" at the main drains in the middle of the pool. The slide could be provided with numerous twists and turns. Heights are variable, usually in the 18’ – 22’ range.

Waterslides are produced by numerous manufacturers, such as Miracle Recreation Equipment Co., ProSlide, Whitewater, or similar manufacturers. The system comprises steel towers or a steel framework, stair railings, platform railings, concrete footings, gel coated fiberglass flume sections, and the pool. The WCHD may require the installation of a separate adjacent pump reservoir tank for connection of pump piping. If required, this reservoir tank must be connected to the pool via an overflow weir in the wall of the pool. Prior to design, discussions should be held with the WCHD to determine the need for this reservoir tank.

As with all other pools, the Slide Pool would be provided with a designated pump/filter recirculation system, including all necessary equipment for disinfection, pH control, liquid level control, and all other miscellaneous pool systems. UV disinfection systems are not required for Slide Pools. The pump/filter system must be designed to provide a Turnover Rate (TOR) of one (1) hour, or less. Typically, a TOR of 0.75 hours is provided for Slide Pools.

Additionally, a separate pump (commonly referred to as the Slide Feature Pump) would be installed to provide water to the slide only. Typically, this pump is designed to provide a maximum flow of 1,000 gpm down the slide.

For safety reasons, a Pump Disconnect Switch (commonly referred to as a “Kill Switch”) must be installed at the top of the slide, to immediately deactivate the Slide Feature Pump in the event of an emergency.

All pumps, motors, and chemical systems for the Slide Pool are proposed to be installed in the new Filter Building.

With its reasonably shallow depths, the Slide Pool could be designed, constructed, and utilized as an instructional pool, when the Slide Feature Pump is deactivated for a prolonged period of time.
Supervision of a Slide Pool must be provided in conformance with WCHD requirements. These requirements usually mandate a Certified Lifeguard on the pool deck, a Pool Attendant in the pool at the exit section, and a Pool Attendant at the top of the platform.

5.06 Bathhouse/Sanitary Facilities (MP, AP, IP, SP)

Bathhouse facilities are currently provided in three (3) separate structures for this portion of the complex. Although the existing total quantity of sanitary fixtures (e.g. — toilets, urinals, lavatories, etc.) is in conformance with code requirements, the installation of additional pools, or revisions to the total area of pool decks, may affect the amount of fixtures required. If additional fixtures are required, it is recommended to provide these additional fixtures on the upper level of the new Filter Building/Pavilion located at the south end of this portion of the site. The new bathroom facilities would be at pool deck level.

Waste piping from these new sanitary fixtures would be connected to the existing sanitary sewer system located on site.

5.07 Main Filter Building (MP, AP, IP, SP)

The existing Filter Building structure has deteriorated in recent years, and is no longer adequate to house the miscellaneous pool filter, pump, chemical control systems, and miscellaneous mechanical / electrical systems for all existing pools. In consideration of this fact, the following recommendations are included below.

1. For the Main Pool and Adult Pool, demolish (or remove and relocate) all related equipment within the existing Filter Building including pipe, valves, fittings, filter tanks, pumps, motors, chemical injection systems, control systems, electrical panels, conduit, wiring, etc.

2. Repair building walls and floors, as needed. Due to the inadequate structural strength and overall integrity of the existing Filter Building roof construction, proposed recommendations include the entire removal of the Filter Building roof construction, and partial removal of the walls at the south Filter Room, down to the original concrete structure. The existing unused piping should be demolished or cut back to allow for the re-construction of the outside walls with proper waterproofing and pier structures to support the ground loads and the new super-imposed roof construction. The new roof could be built to create and extend the available shaded seating area for the Interactive Pool patrons in the form of an open area pavilion with protective railing at the perimeter, where required by the differential in grade.

3. Maintain all equipment and associated systems for the Interactive Pool in the existing Filter Building. Create storage areas in the building that were previously used to house Main Pool and Adult Pool equipment and piping.

4. Construct a new Filter Building at the location of the existing Entrance Booth. The lower (or basement) portion of the building would include all pool filters and mechanical/electrical equipment. This level would be flush with the parking lot, and would include a finished Entrance Booth. The upper portion of this structure would include an open "pavilion", overlooking the pool facility.
The “pavilion” area would provide a shaded area for patrons, and a venue for the Town’s various programs and activities. This level would be flush with the pool decks.

5. Install additional sanitary fixtures in the Filter Building/Pavilion, if necessary to meet fixture requirements of the NYS Building Code.

6. Provide storage rooms in the Filter Building/Pavilion, for winter storage of pool deck equipment, if needed.

7. If salt water chlorine generating systems are not utilized, relocate the existing “Pulsar” tablet chlorination systems, and the automatic chemical controllers, for the Main Pool and Adult Pool, into the new Filter Building. Install all new mechanical/electrical equipment for the Main and Adult Pools, in the new Filter Building.

8. If needed for Main and Adult Pool equipment, install a new electrical transformer at the new Filter Building.

9. Re-route the main electrical service feeder (presently wired to a transformer at the existing Filter Building) to the new transformer at the new Filter Building. From the new building, reconnect a separate feed for lighting at the existing tennis courts, located in the vicinity of the existing Filter Building.

5.08 Concession Building

The Concession Building is fairly fixed in its current configuration and should undergo the following recommended improvements, as previously listed in Section 3.06 of this report, including the following.

The lack of walk-in type refrigerator / freezer units forces the use of several smaller units which, due to the building configuration, place the units away from the service areas. Consolidating this type of storage into walk-in type units would provide operational and storage efficiencies.

A seamless type epoxy floor with an integral cove base would be an effective, low-maintenance replacement material for the existing quarry tile floors.

It is recommended that the existing Concession wall finish be removed and replaced with FRP panel type material in order to provide a near seamless, low-maintenance finish throughout.

The existing hung ceiling panel ceiling is in need of replacement. It is recommended that the ceiling system be replaced with a code compliant vinyl faced gypsum board panel material installed in an aluminum ceiling grid system.

The lighting system should be replaced with high-efficiency vapor-resistant, enclosed type fixtures coordinated with the Concessionaire’s new equipment layout.
The roof exhaust fan connected to the existing kitchen hood should be upgraded with a new up-blast roof mounted fan. A compatible roof protection membrane is recommended around the roof fan penetration.

The existing conduit mounted electrical outlet boxes standing above the floor should be removed and built into new cabinetwork, which would also afford additional below counter storage and additional worktop surfaces / small equipment counter placement areas.

Outlining the recommendations noted above and other items observed during the site visit that would require attention are as follows:

a. Epoxy Floor and Base installation
b. FRP wall finish installations
c. Replacement of the roof exhaust fan with associated roofing.
d. Installation of new ceiling system and lighting.
e. Installation of new concession cabinetwork with associated electrical equipment.
f. Installation of Walk-in Refrigerator / Freezer units.
g. Addition of hand wash sinks spaced as per Health Department.
h. Additional floor drains.
i. Provision of indirect drains at sinks and equipment drains.
j. Three compartment sink with drain board areas on each side.
k. Provision of GFI type electrical receptacles.
l. Electrical service upgrades to handle equipment needs.
m. ADA access ramp to the Ice Cream Station.
n. Provision of a grease trap for the Concession drain line.

5.09 Camp Pool D

At the south end of the Anthony F. Veteran Pool Facility site are the Town’s camp pools. These pools are used for instructional swimming lessons and general enjoyment of young day camp children. Formerly known as the East Camp Pool, Camp Pool D appears to be structurally intact, but is in a deteriorated condition.

Once popular with day camps, Pool D has decreased in popularity in recent years, and does not serve the Town as well as previous years. For this reason, the Town may want to consider the complete demolition and abandonment of this pool, or its replacement with a different type of aquatic venue.

Renovation of the pool, to ensure compliance with code, is possible but not considered to be practical or economically feasible. However, for the purposes of this report, it is anticipated that the Town desires to have a similar type of structure at this location.
Therefore, based on the above, complete replacement of the pool structure is proposed. Specifically, repair/replacement includes the following tasks.

1. Completely demolish the pool floor and all pool walls.

2. Install a similarly (or slightly larger) sized pool, with depths to be determined. Provide new skimmers and wall inlets.

3. Install two (2) properly sized and located, hydraulically balanced, main drains at the deep end of the pool. Provide (or replace) VGBA certified covers or gratings.

4. At the shallow end of the pool, provide 6' to 8' wide steps and handrails. Provide a transfer tier at these steps for secondary ADA access into the pool.

5. Replace all underground piping from the pool to the Filter Building, utilizing Schedule 80 PVC.

6. Demolish and replace existing coping stones.

7. Provide a 2-part epoxy paint on all wetted pool surfaces of the walls and floor. Provide non-slip surfaces at all steps.

8. Replace all concrete decks, deck expansion joints, and expansion joint sealer.

9. Provide two (2) hose bibbs with vacuum breakers for washing down pool decks.

10. Remove and replace the two (2) existing ladders, and all miscellaneous deck equipment.


12. Provide new, individual, pre-manufactured, non-slip tile, deck mounted depth markers. Install 6" x 6" or 8" x 8" tiles in deck recesses. Install individual "No Diving" tile markers utilizing the industry accepted icon graphic. Install additional vertically mounted depth marker signs, as needed.

13. Provide one (1) portable, easily movable, stainless steel / fiberglass lifeguard chair.

14. Provide a new drinking fountain in the vicinity of the pool.

15. Provide a handicap lift toward the shallow end of the pool, for primary ADA accessibility into the pool.

16. Underwater lights are not recommended. Site security lighting should be installed and/or upgraded for safety.
Pool D is one (1) of three (3) special purpose, instructional, Camp Pools located at the south end of the Anthony F. Veteran Facility. Although all three (3) pools are in close proximity, Pool D is somewhat isolated from Pools E & F in that it is located across the road from these pools, in a separate fenced enclosure.

Pool D is the oldest of the instructional pools. As an option, the Town may wish to consider the complete demolition of Pool D, and the installation of a Spray Pad for use by day camps only. It should be noted that, although the Anthony F. Veteran Facility is provided with an Interactive Pool including spray features, this pool is generally not accessible to day camps.

If this option were selected by the Town, the Filter Building would require replacement as indicated below. To meet recent NYSDOH regulations for spray pads a concrete "treatment tank" and UV system would be required for disinfection, in addition to a primary chlorination system.

5.10 Filter Building (Pool D)

The Filter Building for Pool D is a small structure located adjacent to the pool, at the bottom of a small hill. Access to the building is extremely difficult and unsafe, as evidenced by the cracked and settled concrete steps leading to the entrance door. The entrance door and frame are considerably corroded and require replacement.

Although the building is structurally intact, cracking and settlement of the stone walls are evident. The concrete floor is also cracked in numerous locations. Mechanical ventilation is non-existent.

Due to the limited space available in this building, the condition of the building and all mechanical / electrical equipment, and the lack of required systems needed for proper pool operation, it is recommended to replace this building in its entirety.

In general, the following recommendations are proposed, as follows.

1. Demolish the existing Filter Building in its entirety.

2. Construct a new and larger Filter Building, with reinforced concrete walls and floor, adequately sized to house all required equipment.

3. Provide a minimum 4' wide concrete stairway with railings, leading to the building entrance door.

4. Provide mechanical ventilation in the new building.

5. Replace all conduit, wiring, outlets, switches, junction boxes, panels, etc.

6. Provide adequate lighting for building interior and access stairway.

7. Replace recirculation pump, filter, and all pipe, valves, fittings, etc. Place all equipment on concrete "housekeeping" pads. Provide identification number tags for all valves. Provide flow arrows and identification markers for all pipes. Properly color code all pipes. Properly support all pipe and tubing.
8. Provide the required air gap for the backwash line / sewer line connection.


11. Provide hose bibbs with vacuum breakers for general housekeeping purposes in the Filler Room.

12. Replace inoperable flow meter.

13. Provide a flow control valve on the pump / filter system.

14. Provide new liquid level control and automatic makeup water fill systems.

15. Provide a new automatic chemical controller for all pool systems.

16. Interlock the existing calcium hypochlorite \([\text{Ca(OCl)}_2]\) tablet system with the recirculation pump.

17. In lieu of using a \([\text{Ca(OCl)}_2]\) tablet system, consider the installation of a salt water chlorine generating system. With this system, only food grade salt is added to the pool water at a rate of 50 lbs. of salt to 2,000 gallons of water. In the Filter Building, the salt water is converted to chlorine via an electrolytic process, which is directed back to the pool for disinfection. After disinfecting the pool water, the chlorine is converted back to salt, thus replenishing the system. Although the WCHD regulates these systems as a disinfectant, regulatory agencies do not restrict the storage, transportation, or use of salt, as is the case with liquid or tablet chlorine systems.

18. Provide a new muriatic acid feed system (tank and pump), and interlock the system with the recirculation pump.

19. Mount a complete Valve Operation Chart in the room, for use by Town personnel.

5.11 Camp Pool E

Formerly known as the West Camp Pool, Camp Pool E is a shallow special purpose pool, with depths ranging from 1'-6" to 3'-0", used by day camps for swimming instruction. In general, the pool is structurally intact, and is in fair to good condition. The pool is well suited for its intended purpose, and is popular with all visiting day camps.

Based on the above, modifications to the existing pool are recommended, as follows.

1. Remove all pool paint by sandblasting all pool walls and floor to bare concrete.
2. Install a PVC liner on all pool walls and floor. Terminate the liner at the bottom of the coping stones.

3. Replace all precast coping stones.

4. Power wash all concrete decks. Seal decks with a moisture proof sealant coating.

5. Replace expansion joints (if needed) and expansion joint sealant throughout the pool deck.

6. Provide a hose bibb with vacuum breaker at each end of the pool, for washing of concrete decks.

7. Provide a lightweight, portable, easily movable, stainless steel / fiberglass lifeguard chair.

8. Replace 4’ high chain link fence & gates around entire pool. Provide 1” mesh. Ensure that gates are self-closing and self latching.

9. Demolish the entire 1” x 1” tile depth marker band around the pool.

10. Provide new, individual, pre-manufactured, non-slip tile, deck mounted depth markers. Install 6” x 6” or 8” x 8” tiles in existing deck recesses. Install individual “No Diving” tile markers utilizing the industry accepted icon graphic. Install additional vertically mounted depth marker signs, as needed.

11. Provide a handicap lift adjacent to the pool for primary ADA access into the pool.

12. Provide a transfer tier at the pool stairs for secondary ADA access into the pool.

13. Underwater lights are not recommended. Site security lighting should be installed and/or upgraded for safety.

5.12 Camp Pool F

Pool F has the same length and width dimensions as Pool D, however Pool F is slightly deeper, with depths ranging from 3'-6" to 4'-6". This pool is the most recent of the Camp Pools, similar in design and construction, and is generally in fair to good condition.

In order to ensure safety, efficiency, aesthetic appearances, and compliance to code requirements, modifications to the existing pool are recommended as follows.

1. Remove all pool paint by sandblasting all pools walls and floor to bare concrete.
2. Demolish the existing single main drain, and install two (2) new main drains separated by at least 3'-0" (measured center to center). Ensure that new main drain piping is hydraulically balanced. Install VGBA certified main drain covers or gratings.

3. Replace all piping from the pool to the Filter Building.

4. Modify the wall at the shallow end of the pool to provide 6' to 8' wide steps and handrails. Provide a transfer tier at these steps for secondary ADA access into the pool.

5. Install a PVC liner on all pool walls and floor. Terminate the liner at the bottom of the coping stones.

6. Coping stones are in good to excellent condition. Re-point joints as needed.

7. Replace all concrete pool decks.

8. Replace all expansion joints and expansion joint sealant.

9. Remove protruding metal pipe on deck at northwest corner of pool.

10. Provide a vacuum breaker on the existing hose bibb adjacent to the pool, for washing of concrete decks.

11. Provide a lightweight, portable, easily movable, stainless steel / fiberglass lifeguard chair.

12. Replace 4' high chain link fence & gates around entire pool. Provide 1" mesh. Ensure that gates are self-closing and self latching.

13. Provide new, individual, pre-manufactured, non-slip tile, deck mounted depth markers, with spacing as per code. Install 6" x 6" or 8" x 8" tiles in new deck recesses. Install individual "No Diving" tile markers utilizing the industry accepted icon graphic. Install additional vertically mounted depth marker signs, as needed.

14. Provide a handicap lift adjacent to the pool for primary ADA access into the pool.

15. Provide a transfer tier at the new pool stairs for secondary ADA access into the pool.

16. Underwater lights are not recommended. Site security lighting should be installed and/or upgraded for safety.

5.13 Bathhouse/Sanitary Facilities (Pools D, E, F)

The existing Bathhouse for all three (3) Camp Pools is located immediately north of Pool E on the west side of the entrance road. With the exception of service sinks, the existing
quantities of water closets, urinals, lavatories, and drinking fountains, are in
conformance with recently updated NYS Building Codes. With the exception of hose
bibbs, miscellaneous items within the Bathhouse are in conformance with NYSDOH
code requirements.

To ensure complete compliance with all code requirements, proposed improvements are
recommended as follows.

1. Install a minimum of one (1) hose bibb with vacuum breaker in each
   bathroom (Men’s & Women’s).

2. Install one (1) service sink in each bathroom (Men’s & Women’s).

5.14 Filter Building (Pools E & F)

Located immediately to the south of Pool F, the existing Filter Building serves both Pools
E & F. The building is reasonably sized, constructed with stone walls and a wood frame
roof, and is considered to be in fair to good condition, although repairs are required
throughout the structure. The structural integrity of the north side stone wall is
questionable.

Mechanical equipment appears to be aging, with many items of equipment exhibiting
considerable amounts of rust and corrosion. Mechanical ventilation is non-existent.
Original window openings have been covered with plywood.

At the time of site inspection (following pool closure), the Filter Building was in a
disheveled condition. Many items were loosely stored on ceiling joists, numerous items
were placed on the floor thus creating a safety hazard, and pool supplies and chemicals
were randomly placed throughout the room.

Based on the condition of the existing building and pool systems, and to ensure safety
and code compliance, recommendations for improvements are as follows.

1. Repair cracks on north side stone wall.

2. Parge and seal all stone walls to mitigate moisture leakage through walls.

3. Clean entire room by neatly and securely storing all miscellaneous items.

4. Install mechanical ventilation for the building. Provide operable louvers and
dampers throughout the building.

5. Improve lighting levels throughout the room.

6. Remove wood support under the existing RPZ "dump port". Adequately
   support the RPZ to the wall or floor.

7. Install vacuum breakers on all hose bibbs.

8. Mount Valve Operation Charts within the room for both pools.
9. Remove all debris at the safety eyewash / shower unit. Relocate the unit closer to chemical storage areas.

10. Replace pumps, strainers, filters, valves, gauges, meters, etc. for both pools. Provide PVC valves. Number all valves. Provide spare strainer baskets for all strainers.

11. Replace all pipe and fittings with Schedule 80 PVC. Properly identify and color code all pipe lines.

12. Securely support all equipment to floor slab or walls.

13. Wherever possible, install equipment on concrete “housekeeping” pads.


15. Demolish the liquid sodium hypochlorite (NaOCl) disinfection system in its entirety. In lieu of NaOCl, install a Ca(OCl)₂ tablet system, or salt water chlorine generating system as detailed for Pool D. Interlock chlorine systems with the recirculation pumps for each pool.

16. Interlock the liquid acid injection system with the recirculation pump for each pool.

17. Maintain existing electrical panels, however ensure that all wiring is installed in corrosion resistant conduit.
6.00  RECOMMENDED IMPROVEMENTS
MASSARO PARK POOL FACILITY

6.01  Training Pool / Wading Pool / Filter Bldg.

Although functional, both the Training Pool and the Wading Pool are in varying states of disrepair and non-compliance with present day code regulations. Based on the amount of work required and the associated costs to ensure compliance, it does not appear to be economically feasible to renovate the pool structures and associated mechanical and electrical systems.

For the above reasons, possible options are proposed herein for the Town’s consideration. Before deciding on any particular option, the Town may want to consider average daily attendance figures in recent years, capital expenditures, seasonal operation and maintenance costs, the existence of similar facilities within close proximity to this facility, and the need for other types of recreational amenities.

6.02  Option A – Replacement of Pools

Proposed Option A includes the complete demolition of both existing pools, replacement of these pools with a new single pool, abandonment of the existing Filter Room, and the construction of a new Filter Building. Specific recommendations are as follows.

1. Demolish the Training & Wading Pools in their entirety.

2. Demolish all concrete decks.

3. Demolish all deck equipment.

4. Demolish (or abandon) all piping from the pools to the existing Filter Room in the Bathhouse.

5. Demolish all existing pool related equipment and systems in the Filter Room. Utilize the Filter Room for future storage of pool equipment.

6. Replace all rusted and corroded water service valves, fittings, pipes, hose bibbs, etc., as needed. Replace water service line insulation, as needed.

7. Install a new water service line from the existing Filter Room to the new Filter Building.

8. Remove and relocate overhead telephone & CATV wires at the northeast corner of the Training Pool.

9. Demolish deck drain gratings (with large grate openings), and replace with suitably sized grates with openings less than 1/2”.

10. Construct a new combination Training / Wading Pool, with depths ranging from 0'-0" to 3'-6", and measurements of 30'-0" wide x 77'-0" long. The zero entry portion of the pool provides primary ADA access.
11. Orient the pool with the shallow end closest to the Bathhouse.

12. Provide bottom inlets throughout the pool.

13. Provide stainless steel perimeter gutters with overflow weirs to ensure "in-pool" surge capacity, or adequately sized concrete gutters providing 100% surge capacity.

14. Provide stainless steel ladders on each side of the pool at the deep end.

15. Provide a handicap lift at the deep end of the pool for secondary ADA access.

16. Provide all new concrete decks, expansion joints, and joint sealant.

17. Replace all fencing and gates. Provide 8' high vinyl clad chain link fence with 1" mesh to prevent unauthorized entry.

18. Provide hose bibbs at pool for cleaning of decks.

19. Provide new, individual, pre-manufactured, non-slip tile, deck mounted depth markers. Install 6" x 6" or 8" x 8" tiles in deck recesses. Install individual "No Diving" tile markers utilizing the industry accepted icon graphic. Install additional vertically mounted depth marker signs, as needed.

20. Provide new main drains and hydraulically balanced main drain piping.

21. Install a new underground Balance Tank between the new pool and Filter Building.

22. Demolish the abandoned adjacent Handball Court. Install a new Filter Building at this location, to house all mechanical and electrical equipment for the new pool.

23. Provide a pump pit in the new Filter Bldg., to permit the use of pumps with a flooded suction.

24. Provide new high rate sand (HRS) filters, or a regenerative media filter (RMF) if spray features are provided. Provide a system turnover rate (TOR) of 3.50 hrs. (+/-).

25. Install all new piping from pool to tank, and tank to Filter Building. Utilize Schedule 80 PVC pipe and fittings.

26. If possible, maintain the existing tablet chlorination system for the new pool. Interlock the system with the new recirculation pump.

27. Provide an automatic acid feed system (for pH control). Interlock the system with the new recirculation pump.

28. Provide a new automatic chemical controller, per code.
The installation of spray features is not included in the above listed proposed improvements, due to the existence of similar facilities within close proximity to the Massaro Park Pool. If the Town desires to have any type of spray feature installed in the new pool, a UV disinfection system may be required by the NYSDOH in the future. In all probability, the future installation of a UV system would require a slightly larger Filter Building.

6.03 **Option B – Demolition of Pools**

Based on the considerations listed above, the Town may want to consider the complete abandonment and demolition of the Training Pool, Wading Pool, and Filter Room, in their entirety. This option also includes the demolition of the abandoned handball courts, and the complete demolition of all pool decks, pool deck equipment, fencing, etc.

Under this option, the area would be backfilled and landscaped, to return the area to its original “park-like” condition.

6.04 **Option C – New Recreational Facilities**

Again, based on the considerations listed above, the desires of area residents, and available budget considerations, the Town may want to consider the demolition of all items as described in Option B, and the installation of additional recreational facilities such as volleyball courts, basketball courts, picnic tables and benches, shade structures, or similar amenities.
7.00 RECOMMENDED PHASING OF CONSTRUCTION

7.01 General

With few exceptions, most health departments do not permit partial modernization of swimming pool facilities. That is, if certain portions of a facility are in need of renovation or modernization, local health departments normally require that all pools, pool systems, and amenities at the facility, be renovated to ensure full compliance with all aspects of Subpart 6-1 of the State Sanitary Code.

However, due to the geographical, operational, and physical separation of the pools and pool systems described in this report, it is anticipated that the WCHD would be willing to entertain the notion of permitting all proposed renovations in a phased construction approach.

Implementation of construction phasing will afford the Town the opportunity to establish capital funding for each individual phase. Additionally, establishment of construction phases will mitigate (if not eliminate) the need to close facilities during peak summer months, by ensuring that construction work items can be completed during the normal September to June time period.

Prior to commencement of design work on any facility, detailed discussions should be held with representatives of the WCHD, to provide them with a complete understanding of the proposed construction phasing, and to obtain their preliminary approval of all proposed schedules.

Based on the above, recommendations are proposed herein for a multi-phased improvement program for all facilities discussed in the report. A brief summary of each individual phase is included below.

7.02 Phase 1 – AFV Main Facility

Proposed Phase 1 is the largest and most complicated of the construction phases described herein, and addresses the most critical items discussed in this report. In general, this phase includes work to be performed at the Anthony F. Veteran Pool Facility, specifically as it pertains to the Main Pool, Adult Pool, Interactive Pool, and Filter Building.

As part of Phase 1, it is recommended to perform the following construction items.

1. Perform all new work at the Main Pool, as described in Section 5.02 of this report.

2. Completely replace the Adult Pool, as described in Section 5.03.

3. Modify the Interactive Pool, as described in Section 5.04.

4. Install new underground piping, and a new underground concrete Balance Tank, for a future Slide Pool, as described in Section 5.05. It is
anticipated that the future Slide Pool would be located northwest of the existing Main Pool.

5. Demolish existing mechanical / electrical equipment associated with the Main and Adult Pools in the existing Filter Building, as described in Section 5.07.

6. Construct a new Filter Building, including open air pavilion at pool level, new climate controlled Ticket Booth Office, and ADA accessible ramps to pool level, as described in Section 5.07.

7. Phase 1 Add Alternate - Reconstruct the walls, and completely replace the roof structure, of the existing Filter Building, to accommodate an additional seating area for the Concession Building, as described in Section 5.07.

Since all existing concrete decks will be demolished and replaced at the Main and Adult Pools, it is recommended to include in this phase, all underground tanks, pipe, fittings, underground conduit, etc., for a future Slide Pool (discussed further herein).

By performing the above work under Phase 1, all pools and pool systems currently in existence at the north end of the Anthony F. Veteran site, will be in full compliance with all NYSDOH code regulations.

7.03 Phase 2 – AFV Slide Pool / Concession Bldg.

To provide a new and varied aquatic experience for bathers at the Anthony F. Veteran Pool Facility, this report includes recommendations for the installation of a Slide Pool. Although the installation of underground pipe, fittings, tanks, and conduit was proposed to be included under Phase 1, the installation of the Slide Pool and Slide Structure is proposed to be included under Phase 2.

Additionally, recommendations under this phase include improvements to the Concession Building.

In general, proposed Phase 2 would include the following items.

1. Installation of a Slide Pool and Slide Structure, as described in Section 5.05 of this report.

2. Installation of all pumps, motors, filter, pipe, valves, fittings, and associated mechanical / electrical systems in the new Filter Building constructed under Phase 1.

3. Installation of all concrete decks, deck equipment, fencing, gates, etc. at the Slide Pool.

4. Installation of sinks, floor drains, equipment drains, receptacles, updated electrical service, ADA accessible ramps, and grease trap at the Concession Building, as described in Section 5.08.
7.04 Phase 3 – Massaro Pools

The Training and Wading Pools at the Massaro Park Pool Facility are deteriorating, but are operating satisfactorily as of the date of this report.

Based on the above, and depending on projected future attendance, budget considerations, and feasibility analyses, it is recommended to include one (1) of the following options under Phase 3 of the renovation program.

1. Option A

   Demolish all existing pools and the existing Handball Court at the Massaro Park Pool Facility, and install a new combination pool and new Filter Building, as described in Section 6.02.

2. Option B

   Demolish all existing pools and the existing Handball Court at the Massaro Park Pool Facility, and return the area to its “park-like” condition, as described in Section 6.03.

3. Option C

   Demolish all existing pools and the existing Handball Court at the Massaro Park Pool Facility, and construct additional recreational amenities, as described in Section 6.04.

7.05 Phase 4 – AFV Camp Pools

Although the Camp Pools at the south end of the Anthony F. Veteran site are in varying stages of non-compliance with recent code requirements, these pools are still operating satisfactorily, and continue to be a popular attraction with young day camp children. If no major renovations are planned at any of these pools for the immediate future, and based on the physical and operational separation of these pools from the pools at the north end, it is anticipated that the WCHD will continue to permit operation of the Camp Pools on an “as-is” basis.

Based on the above, proposed recommendations to be included under Phase 4 of the improvement program, include renovations to the Camp Pools, as follows.

1. Completely replace Camp Pool D, with a similar (or slightly larger) pool, as described in Section 5.09 of this report.

2. Replace the existing Filter Building for Pool D, as described in Section 5.10.

3. Completely renovate Camp Pool E, as described in Section 5.11.

4. Completely renovate Camp Pool F, as described in Section 5.12.
5. Renovate the Bathhouse, as detailed in Section 5.13.

6. Renovate the Filter Building for Pools E & F, as described in Section 5.14.
8.00 ESTIMATED DESIGN & CONSTRUCTION COSTS

8.01 General

Based on the construction phasing discussed in Section 7.00 of this report, estimated or conceptual costs are included herein for engineering design and construction tasks associated with the proposed improvements.

All costs are provided in 2011 dollars. If phases are designed and constructed in later years, additional monetary amounts must be included to compensate for yearly labor and material increases.

Costs included herein are presented in table format, based on Specification Division numbers as established by the Construction Specifications Institute (CSI). These Division numbers are listed below, including a brief explanation of the individual construction tasks included under each Division, as follows.

<table>
<thead>
<tr>
<th>CSI Div. No.</th>
<th>Description</th>
<th>Items Included in Division</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General Conditions</td>
<td>Temporary Construction, Submittals,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Startup, Winterization, Personnel Instruction, etc.</td>
</tr>
<tr>
<td>2</td>
<td>Site Work</td>
<td>Demolition, Earthwork, Utilities, Pavements,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fencing, Site Improvements, Plantings, etc.</td>
</tr>
<tr>
<td>3</td>
<td>Concrete</td>
<td>Excavation for Concrete, Concrete Pools and Decks,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reinforcement, Expansion Joints, Sealants,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Waterstops, etc.</td>
</tr>
<tr>
<td>4</td>
<td>Masonry</td>
<td>Brick, Block, Masonry Reinforcement, Mortar,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grout, etc.</td>
</tr>
<tr>
<td>5</td>
<td>Metals</td>
<td>Structural Steel, Castings, Lintels, Supports,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Miscellaneous Metals, etc.</td>
</tr>
<tr>
<td>6</td>
<td>Wood &amp; Plastics</td>
<td>Wood Framing, Carpentry, Plastic Fabrications, etc.</td>
</tr>
<tr>
<td>7</td>
<td>Thermal &amp; Moisture</td>
<td>Waterproofing, Insulation, Building Sealants,</td>
</tr>
<tr>
<td></td>
<td>Protection</td>
<td>Flashing, Roofing, etc.</td>
</tr>
<tr>
<td>8</td>
<td>Doors &amp; Windows</td>
<td>Doors &amp; Frames, All Types of Windows, Door &amp; Window Finish Hardware, etc.</td>
</tr>
<tr>
<td>9</td>
<td>Finishes</td>
<td>Building Paint, Wall &amp; Floor Treatments, etc.</td>
</tr>
<tr>
<td>10</td>
<td>Specialties</td>
<td>Misc. Equip. Sun Shelters, Site Signage, etc.</td>
</tr>
<tr>
<td>11</td>
<td>Equipment</td>
<td>Food Service Equipment, etc.</td>
</tr>
<tr>
<td>12</td>
<td>Furnishings</td>
<td>Building &amp; Office Furnishings</td>
</tr>
</tbody>
</table>
13 Special Construction
Pool Pipe, Valves, Fittings, Filters, Pumps,
Strainers, Chem. Sys., Controllers, UV Sys., Pipe
Hangers & Supports, Deck Markings, Pool
Sealants, Skimmers & Gutters, Deck Equip., Pool
Painting, Color Coding of Pool Piping, Pool
Signage, and all Misc. Pool Systems & Equipment.

14 Conveying Systems
Elevators, Cranes, Hoists, etc.

15 Plumbing & Mechanical
All Plumbing & HVAC Equipment & Systems.

16 Electrical
Conduit, Wire, Outlets, Switches, Electrical Panels
& Enclosures, Bonding, Grounding, Motor Control
Sys., Lighting, Fire Alarm Systems, Heaters, etc.

8.02 Phase 1 – AFV Main Facility

In general, costs associated with Phase 1 tasks include:

1. Renovations to, and replacement of the Main Pool (see Section 5.02 of
   the report).

2. Replacement of the Adult Pool (see Section 5.03).

3. Minor renovations to the Interactive Pool (see Section 5.04).

4. New site piping & U/G Balance Tank (only) for a future Slide Pool (see
   Section 5.05).

5. Partial abandonment of the existing Filter Building (see Section 5.07).

6. Construction of a new Filter Building / Pavilion (see Section 5.07).

In the event that funding is available, an Add Alternate cost is included herein, for
modifications to the walls, and roof replacement at the existing Filter Building, in order to
provide an additional outdoor seating area at the Concession Building (see Section
5.08).

The conceptual costs associated with Phase 1 are summarized as follows.

<table>
<thead>
<tr>
<th>CSI Division</th>
<th>Description</th>
<th>Cost of Materials &amp; Labor (Phase 1)</th>
<th>Cost of Materials &amp; Labor (Add Alt.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1</td>
<td>General Conditions</td>
<td>$ 201,500</td>
<td>$ 18,000</td>
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<tr>
<td>2</td>
<td>Site Work</td>
<td>$ 373,860</td>
<td>$ 40,400</td>
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<td>3</td>
<td>Concrete</td>
<td>$ 411,140</td>
<td>$ 94,000</td>
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<td>4</td>
<td>Masonry</td>
<td>$1,200,000</td>
<td>$ 16,800</td>
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<td>5</td>
<td>Metals</td>
<td>$ 49,700</td>
<td>$ 63,500</td>
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</tbody>
</table>
6 Wood & Plastics $ 6,000 $ 90,000
7 Thermal & Moisture Protection $ 0 $ 55,400
8 Doors & Windows $ 0 $ 10,950
9 Finishes $ 0 $ 12,000
10 Specialties $ 0 $ 300
11 Equipment $ 0 $ 0
12 Furnishings $ 0 $ 15,000
13 Special Construction $1,272,390 $ 0
14 Conveying Systems $ 3,500 $ 0
15 Plumbing & Mechanical $ 35,500 $ 0
16 Electrical $ 187,000 $ 25,000

Sub-Total (2010 Dollars) $3,740,590 $441,350
Bonds & Insurances @ 6% $ 224,435 $ 26,481
Sub-Total $3,965,025 $467,831
Contingencies @ 10% $ 396,503 $ 46,783
Sub-Total $4,361,528 $514,614
Contractor's 21% OH&P $ 915,921 $108,069
Sub-Total $5,277,449 $622,683
Design & CA Fees @ 10% $ 527,745 $ 62,268
Sub-Total $5,805,194 $684,951
Cost Increase for 2011 @ 2.5% $ 145,130 $ 17,124
2011 Grand Total – Phase 1 $5,950,324 $702,075

Say $5,950,000 $705,000

8.03 Phase 2 – AFV Slide Pool & Concession Area

In general, costs associated with Phase 2 tasks include:

1. Construction of a new Slide Pool, Waterslide, Decks, Fencing, etc. (see Section 5.05 of the report).

2. Construction of a new Slide Pool Pump Reservoir (if required by the WCHD).

3. Connection of new pool piping to the Balance Tank and pipe lines previously installed under Phase 1.

4. Installation of new Slide Pool mechanical / electrical equipment in the new Filter Building.

5. Minor renovations to the Concession Building (see Section 5.08).

The conceptual costs associated with Phase 2 are summarized as follows.
<table>
<thead>
<tr>
<th>CSI Division No.</th>
<th>Description</th>
<th>Cost of Materials &amp; Labor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General Conditions</td>
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<td>2</td>
<td>Site Work</td>
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<td>3</td>
<td>Concrete</td>
<td>$ 21,700</td>
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<td>4</td>
<td>Masonry</td>
<td>$ 0</td>
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<tr>
<td>5</td>
<td>Metals</td>
<td>$ 2,500</td>
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<td>6</td>
<td>Wood &amp; Plastics</td>
<td>$ 12,650</td>
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<tr>
<td>7</td>
<td>Thermal &amp; Moisture Protection</td>
<td>$ 0</td>
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<tr>
<td>8</td>
<td>Doors &amp; Windows</td>
<td>$ 0</td>
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<tr>
<td>9</td>
<td>Finishes</td>
<td>$ 83,000</td>
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<td>10</td>
<td>Specialties</td>
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<tr>
<td>11</td>
<td>Equipment</td>
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<td>12</td>
<td>Furnishings</td>
<td>$ 0</td>
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<td>13</td>
<td>Special Construction</td>
<td>$ 255,813</td>
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<td>14</td>
<td>Conveying Systems</td>
<td>$ 0</td>
</tr>
<tr>
<td>15</td>
<td>Plumbing &amp; Mechanical</td>
<td>$ 12,200</td>
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<tr>
<td>16</td>
<td>Electrical</td>
<td>$ 37,500</td>
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</table>

Sub-Total (2010 Dollars) $ 519,488
Bonds & Insurances @ 6% $ 31,169
Sub-Total $ 550,657
Contingencies @ 10% $ 55,066
Sub-Total $ 605,723
Contractor’s 21% OH&P $ 127,202
Sub-Total $ 732,925
Design & CA Fees @ 10% $ 73,292
Sub-Total $ 806,217
Cost Increase for 2011 @ 2.5% $ 20,155
2011 Grand Total – Phase 2 $ 826,373

Say $ 827,000

8.04 Phase 3 – Massaro Pools (Option A)

This report discusses three (3) options for the work associated with the Massaro Park Pool Facility. Option A includes the replacement of the Training Pool and Wading Pool with a new combination Training / Wading Pool. Option B includes the abandonment and demolition of the existing pools, with no proposed replacement of pools. Option C includes the demolition of these pools, with the possible future installation of a recreational piece of equipment.

In general, costs associated with the design and construction of tasks in Option A of Phase 3, as detailed in Section 6.02 of the report, include the following items:

1. Demolition of the Training & Wading Pools at the Massaro Park Pool Facility.
2. Demolition of the abandoned Handball Court at Massaro.

4. Abandonment of the existing Filter Room, and construction of a new Filter Building at Massaro.

The conceptual costs associated with Option A of Phase 3 are summarized as follows.

<table>
<thead>
<tr>
<th>CSI Division</th>
<th>Description</th>
<th>Cost of Materials &amp; Labor</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
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<td></td>
</tr>
<tr>
<td>1</td>
<td>General Conditions</td>
<td>$ 88,500</td>
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<tr>
<td>2</td>
<td>Site Work</td>
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<td>3</td>
<td>Concrete</td>
<td>$ 66,300</td>
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<td>4</td>
<td>Masonry</td>
<td>$ 72,000</td>
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<td>5</td>
<td>Metals</td>
<td>$ 5,500</td>
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<tr>
<td>6</td>
<td>Wood &amp; Plastics</td>
<td>$ 2,000</td>
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<td>7</td>
<td>Thermal &amp; Moisture Protection</td>
<td>$ 4,320</td>
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<tr>
<td>8</td>
<td>Doors &amp; Windows</td>
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<td>9</td>
<td>Finishes</td>
<td>$ 3,125</td>
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<tr>
<td>10</td>
<td>Specialties</td>
<td>$ 0</td>
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<tr>
<td>11</td>
<td>Equipment</td>
<td>$ 0</td>
</tr>
<tr>
<td>12</td>
<td>Furnishings</td>
<td>$ 0</td>
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<tr>
<td>13</td>
<td>Special Construction</td>
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<tr>
<td>14</td>
<td>Conveying Systems</td>
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<tr>
<td>15</td>
<td>Plumbing &amp; Mechanical</td>
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<tr>
<td>16</td>
<td>Electrical</td>
<td>$ 38,000</td>
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Sub-Total (2010 Dollars) $ 591,250
Bonds & Insurances @ 6% $ 35,475
Sub-Total $ 626,725
Contingencies @ 10% $ 62,673
Sub-Total $ 689,398
Contractor’s 21% OH&P $ 144,773
Sub-Total $ 834,171
Design & CA Fees @ 10% $ 83,417
Sub-Total $ 917,588
Cost Increase for 2011 @ 2.5% $ 22,940
Grand Total – Phase 3 (Option A) $ 940,528

Say $ 941,000

8.05 Phase 3 – Massaro Pools (Option B)

If the Town elects Option B, as discussed in Section 6.03 of this report, it is estimated that the conceptual costs for Option A would be reduced to the amounts shown below.
8.06 Phase 3 – Massaro Pools (Option C)

If the Town elects Option C, as discussed in Section 6.04 of this report, it is estimated that the conceptual costs for this option would be similar to the costs included in Option B above, with the addition of all costs associated with the design and construction of recreation equipment, as selected by the Town.

8.07 Phase 4 – AFV Camp Pools

The final phase of the recommended improvement program includes renovations to the Camp Pools located at the south end of the Anthony F. Veteran Facility. Although these pools are functional and operational, numerous items and systems continue to deteriorate, thus requiring renovation or replacement.
In general, costs associated with the design and construction of tasks in Phase 4 include the following items.

1. Modify and renovate Camp Pool D, including new pool floor, pool steps, PVC liner system, etc. (see Section 5.09 of the report).

2. Replace the existing Filter Building for Camp Pool D, including access stairway, mechanical / electrical equipment, ventilation, lighting, etc. (see Section 5.10).

3. Modify and renovate Camp Pool E, including new PVC liner system, coping stones, fence, gates, tile band, etc. (see Section 5.11).

4. Modify and renovate Camp Pool F, including new main drains, pool steps, PVC liner system, pool decks, fence, gates, etc. (see Section 5.12).

5. Install hose bibbs with vacuum breakers, and service sinks, in the Bathhouse (see Section 5.13).

6. Renovate the existing Filter Building for Camp Pools E & F, including new ventilation, wall repairs, lighting, selected mechanical / electrical equipment, pipe, valves, fittings, etc. (see Section 5.14).

The conceptual costs associated with Phase 4 are summarized as follows.

<table>
<thead>
<tr>
<th>CSI Division No.</th>
<th>Description</th>
<th>Cost of Materials &amp; Labor</th>
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<tbody>
<tr>
<td>1</td>
<td>General Conditions</td>
<td>$73,000</td>
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<tr>
<td>2</td>
<td>Site Work</td>
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<tr>
<td>3</td>
<td>Concrete</td>
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<td>4</td>
<td>Masonry</td>
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<td>5</td>
<td>Metals</td>
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<td>6</td>
<td>Wood &amp; Plastics</td>
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<td>7</td>
<td>Thermal &amp; Moisture Protection</td>
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<td>8</td>
<td>Doors &amp; Windows</td>
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<td>9</td>
<td>Finishes</td>
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<td>10</td>
<td>Specialties</td>
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<td>11</td>
<td>Equipment</td>
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<tr>
<td>12</td>
<td>Furnishings</td>
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<td>13</td>
<td>Special Construction</td>
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<td>14</td>
<td>Conveying Systems</td>
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<tr>
<td>15</td>
<td>Plumbing &amp; Mechanical</td>
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<td>16</td>
<td>Electrical</td>
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<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Sub-Total (2010 Dollars)</td>
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<tr>
<td>Bonds &amp; Insurances @ 6%</td>
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<tr>
<td><strong>Say</strong></td>
<td><strong>$990,000</strong></td>
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Appendix 1

Photos of Existing Conditions
Anthony F. Veteran Pool Facility

Main Pool
Appendix 2

Photos of Existing Conditions
Anthony F. Veteran Pool Facility

Adult Pool
Appendix 3

Photos of Existing Conditions
Anthony F. Veteran Pool Facility

Interactive Pool
Appendix 4

Photos of Existing Conditions
Anthony F. Veteran Pool Facility

Main Filter Building
Appendix 5

Photos of Existing Conditions
Anthony F. Veteran Pool Facility

Camp Pool D & Filter Building
Appendix 6

Photos of Existing Conditions
Anthony F. Veteran Pool Facility

Camp Pool E
Appendix 7

Photos of Existing Conditions
Anthony F. Veteran Pool Facility

Camp Pool F
Appendix 8

Photos of Existing Conditions
Anthony F. Veteran Pool Facility

Camp Pools E & F – Filter Building
Appendix 9

Photos of Existing Conditions
Massaro Park Pool Facility

Training Pool
Appendix 10

Photos of Existing Conditions
Massaro Park Pool Facility

Wading Pool
Appendix 11

Photos of Existing Conditions
Massaro Park Pool Facility

Filter Building