



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**HORIZON SEWER MAIN REHAB/REPLACEMENT**

**Project No: U0003**

|                               |                  |                                   |            |
|-------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b> | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>       | Ali Zenhari      | <b>Projected Start Date</b>       | 07/01/2015 |
| <b>Total Projected Cost:</b>  | \$994,741        | <b>Projected Completion Date:</b> | 08/31/2017 |

**Prior Years ActualCosts:**

**Project Description:**

Rehabilitate segments of 10,300 lf 12-inch sewer and 3,800 lf 15-inch sewer, and 60 manholes.

| Funding Sources                  | Total            | 2016/17          | 2017/18          | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|----------------------------------|------------------|------------------|------------------|---------|---------|---------|---------|--------|
| Wastewater - Rehab & Replacement | \$994,741        | \$390,863        | \$603,878        |         |         |         |         |        |
|                                  | <b>\$994,741</b> | <b>\$390,863</b> | <b>\$603,878</b> |         |         |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**General Utility Services**

**SCADA MASTER PLAN PROGRAM IMPLEMENTATION**

**Project No: U0009**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>         | Priscilla Howell | <b>Projected Start Date</b>       | 07/01/2010 |
| <b>Total Projected Cost:</b>    | \$5,014,481      | <b>Projected Completion Date:</b> | 06/30/2019 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

System upgrade of the 1990's SCADA which monitors and controls water, reclaimed water and wastewater systems, using instrumentation, programmable logic controllers, computer workstation human machine interface (HMI), historical data storage and reporting and various communications technologies.

| Funding Sources                  | Total              | 2016/17            | 2017/18            | 2018/19          | 2019/20 | 2020/21 | 2021/22 | Future |
|----------------------------------|--------------------|--------------------|--------------------|------------------|---------|---------|---------|--------|
| Water - Rehab & Replacement      | \$2,250,738        | \$1,160,343        | \$1,006,824        | \$83,571         |         |         |         |        |
| Wastewater - Rehab & Replacement | \$2,763,743        | \$1,616,632        | \$1,063,541        | \$83,570         |         |         |         |        |
|                                  | <b>\$5,014,481</b> | <b>\$2,776,975</b> | <b>\$2,070,365</b> | <b>\$167,141</b> |         |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**WRF AIR TREATMENT ASSESSMENT AND IMPROVEMENTS**

**Project No: U0015**

**Submitting Department:** Utility Services **Project Status:** Active  
**Project Manager:** Adrian Edwards **Projected Start Date:** 01/01/2014  
**Total Projected Cost:** \$8,442,455 **Projected Completion Date:** 10/31/2017  
**Prior Years ActualCosts:**

**Project Description:**

The existing odor control system was placed into operation in March 2006 as part of the Kurt R. Segler Water Reclamation Facility Phase III Expansion. The odor control system installed was the Phoenix Odor Control System, Model 30000, manufactured by Calgon Environmental. A study was commissioned and completed July 7, 2010, which recommended replacement of the system.

| Funding Sources                  | Total              | 2016/17            | 2017/18            | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|----------------------------------|--------------------|--------------------|--------------------|---------|---------|---------|---------|--------|
| Wastewater - Rehab & Replacement | \$8,442,455        | \$3,887,990        | \$4,554,465        |         |         |         |         |        |
|                                  | <b>\$8,442,455</b> | <b>\$3,887,990</b> | <b>\$4,554,465</b> |         |         |         |         |        |

**Operating Impacts**

|                   |                    |  |                 |                  |                  |                  |                  |                  |
|-------------------|--------------------|--|-----------------|------------------|------------------|------------------|------------------|------------------|
| Utilities         | \$211,315          |  | \$15,060        | \$23,273         | \$23,622         | \$23,976         | \$24,336         | \$101,048        |
| Maintenance Labor | \$532,400          |  | \$35,140        | \$55,920         | \$57,598         | \$59,326         | \$61,105         | \$263,311        |
| Supplies          | \$70,439           |  | \$5,020         | \$7,758          | \$7,874          | \$7,992          | \$8,112          | \$33,683         |
| Small Capital     | \$70,439           |  | \$5,020         | \$7,758          | \$7,874          | \$7,992          | \$8,112          | \$33,683         |
| Operations Labor  | \$228,172          |  | \$15,060        | \$23,966         | \$24,685         | \$25,425         | \$26,188         | \$112,848        |
|                   | <b>\$1,112,765</b> |  | <b>\$75,300</b> | <b>\$118,675</b> | <b>\$121,653</b> | <b>\$124,711</b> | <b>\$127,853</b> | <b>\$544,573</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**P-2 REPLACEMENT**

**Project No: U0016**

|                               |                  |                                   |            |
|-------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b> | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>       | Christopher Erb  | <b>Projected Start Date</b>       | 07/01/2014 |
| <b>Total Projected Cost:</b>  | \$2,591,094      | <b>Projected Completion Date:</b> | 06/30/2019 |

**Prior Years ActualCosts:**

**Project Description:**

Replacement of 30-year old major mechanical components that may include pumps, motors, valves, electrical, compressor; and piping.

| Funding Sources             | Total              | 2016/17            | 2017/18            | 2018/19          | 2019/20 | 2020/21 | 2021/22 | Future |
|-----------------------------|--------------------|--------------------|--------------------|------------------|---------|---------|---------|--------|
| Water - Rehab & Replacement | \$2,591,094        | \$1,110,469        | \$1,110,469        | \$370,156        |         |         |         |        |
|                             | <b>\$2,591,094</b> | <b>\$1,110,469</b> | <b>\$1,110,469</b> | <b>\$370,156</b> |         |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**2120 S PASEO VERDE AND STEPHANIE IMPROVEMENTS**

**Project No: U0020**

|                                 |                         |                                   |                   |
|---------------------------------|-------------------------|-----------------------------------|-------------------|
| <b>Submitting Department:</b>   | <b>Utility Services</b> | <b>Project Status:</b>            | <b>Proposed</b>   |
| <b>Project Manager:</b>         | <b>Don Pelissier</b>    | <b>Projected Start Date</b>       | <b>08/01/2016</b> |
| <b>Total Projected Cost:</b>    | <b>\$970,231</b>        | <b>Projected Completion Date:</b> | <b>06/30/2018</b> |
| <b>Prior Years ActualCosts:</b> |                         |                                   |                   |

**Project Description:**

**Design and construct approximately 2,650 lf of 12-inch water line, and remove/abandon PRV-99.**

| <b>Funding Sources</b>    | <b>Total</b>     | <b>2016/17</b>  | <b>2017/18</b>   | <b>2018/19</b> | <b>2019/20</b> | <b>2020/21</b> | <b>2021/22</b> | <b>Future</b> |
|---------------------------|------------------|-----------------|------------------|----------------|----------------|----------------|----------------|---------------|
| Water - Improvement Bonds | \$970,231        | \$79,500        | \$890,731        |                |                |                |                |               |
|                           | <b>\$970,231</b> | <b>\$79,500</b> | <b>\$890,731</b> |                |                |                |                |               |

**Operating Impacts**

|                   |                  |  |  |                |                 |                 |                 |                 |
|-------------------|------------------|--|--|----------------|-----------------|-----------------|-----------------|-----------------|
| Operations Labor  | \$23,043         |  |  | \$668          | \$2,920         | \$3,008         | \$3,098         | \$13,349        |
| Maintenance Labor | \$53,764         |  |  | \$1,559        | \$6,813         | \$7,018         | \$7,228         | \$31,146        |
| Supplies          | \$7,043          |  |  | \$223          | \$931           | \$945           | \$960           | \$3,984         |
| Utilities         | \$21,130         |  |  | \$668          | \$2,794         | \$2,836         | \$2,879         | \$11,953        |
| Small Capital     | \$7,043          |  |  | \$223          | \$931           | \$945           | \$960           | \$3,984         |
|                   | <b>\$112,023</b> |  |  | <b>\$3,341</b> | <b>\$14,389</b> | <b>\$14,752</b> | <b>\$15,125</b> | <b>\$64,416</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**DRAIN AND CLEANOUT STATION FOR COMBINATION SEWER TRUCKS**

**Project No: U0021**

|                               |                  |                                   |            |
|-------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b> | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>       | Adrian Edwards   | <b>Projected Start Date</b>       | 07/01/2013 |
| <b>Total Projected Cost:</b>  | \$119,139        | <b>Projected Completion Date:</b> | 10/01/2017 |

**Prior Years ActualCosts:**

**Project Description:**

Design and install a drain and cleanout station at the headworks of the Water Reclamation Facility for the combination trucks that Field Services uses to maintain the sewer collection system.

| Funding Sources                | Total            | 2016/17         | 2017/18         | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|--------------------------------|------------------|-----------------|-----------------|---------|---------|---------|---------|--------|
| Wastewater - Improvement Bonds | \$119,139        | \$55,688        | \$63,451        |         |         |         |         |        |
|                                | <b>\$119,139</b> | <b>\$55,688</b> | <b>\$63,451</b> |         |         |         |         |        |

**Operating Impacts**

|                   |                 |              |                |                |                |                |                |
|-------------------|-----------------|--------------|----------------|----------------|----------------|----------------|----------------|
| Operations Labor  | \$2,191         | \$145        | \$230          | \$237          | \$244          | \$251          | \$1,084        |
| Utilities         | \$2,029         | \$145        | \$223          | \$227          | \$230          | \$234          | \$970          |
| Maintenance Labor | \$5,109         | \$337        | \$537          | \$553          | \$569          | \$586          | \$2,527        |
| Supplies          | \$676           | \$48         | \$74           | \$76           | \$77           | \$78           | \$323          |
| Small Capital     | \$676           | \$48         | \$74           | \$76           | \$77           | \$78           | \$323          |
|                   | <b>\$10,681</b> | <b>\$723</b> | <b>\$1,138</b> | <b>\$1,169</b> | <b>\$1,197</b> | <b>\$1,227</b> | <b>\$5,227</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**MAGIC WAY SEWER MAIN REHABILITATION**

**Project No: U0024**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Greg Radig       | <b>Projected Start Date</b>       | 08/01/2017 |
| <b>Total Projected Cost:</b>    | \$4,813,477      | <b>Projected Completion Date:</b> | 11/30/2019 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Rehabilitate approximately 1,250 lf of 15-inch and 18-inch sewer line and approximately 13,000 lf of 21-inch sewer line using cured-in-place lining (CIPP) and spiral wound systems; and rehabilitate 62 72-inch manholes.

| Funding Sources                  | Total              | 2016/17 | 2017/18          | 2018/19            | 2019/20          | 2020/21 | 2021/22 | Future |
|----------------------------------|--------------------|---------|------------------|--------------------|------------------|---------|---------|--------|
| Wastewater - Rehab & Replacement | \$4,813,477        |         | \$324,489        | \$3,994,718        | \$494,270        |         |         |        |
|                                  | <b>\$4,813,477</b> |         | <b>\$324,489</b> | <b>\$3,994,718</b> | <b>\$494,270</b> |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**TOWNSITE CAST IRON MAIN REPLACEMENT PHASE 4**

**Project No: U0026**

|                                 |                         |                                   |                   |
|---------------------------------|-------------------------|-----------------------------------|-------------------|
| <b>Submitting Department:</b>   | <b>Utility Services</b> | <b>Project Status:</b>            | <b>Proposed</b>   |
| <b>Project Manager:</b>         | <b>Field Operations</b> | <b>Projected Start Date</b>       | <b>07/01/2019</b> |
| <b>Total Projected Cost:</b>    | <b>\$2,259,260</b>      | <b>Projected Completion Date:</b> | <b>01/31/2022</b> |
| <b>Prior Years ActualCosts:</b> |                         |                                   |                   |

**Project Description:**

Design and construct approximately 2,000 lf of 8-inch water main and approximately 3,500 lf of 8-inch sewer main; install 8 fire hydrants and lateral assemblies, and 149 new water/sewer services; remove/abandon service laterals located in allies; and remove/replace asphalt.

| <b>Funding Sources</b>           | <b>Total</b>       | <b>2016/17</b> | <b>2017/18</b> | <b>2018/19</b> | <b>2019/20</b>  | <b>2020/21</b>     | <b>2021/22</b>   | <b>Future</b> |
|----------------------------------|--------------------|----------------|----------------|----------------|-----------------|--------------------|------------------|---------------|
| Wastewater - Rehab & Replacement | \$1,355,556        |                |                |                | \$55,776        | \$974,835          | \$324,945        |               |
| Water - Rehab & Replacement      | \$903,704          |                |                |                | \$37,184        | \$649,890          | \$216,630        |               |
|                                  | <b>\$2,259,260</b> |                |                |                | <b>\$92,960</b> | <b>\$1,624,725</b> | <b>\$541,575</b> |               |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**2120 NORTH GREEN VALLEY PKWY IMPROVEMENTS**

**Project No: U0027**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>         | Don Pelissier    | <b>Projected Start Date</b>       | 11/01/2015 |
| <b>Total Projected Cost:</b>    | \$817,421        | <b>Projected Completion Date:</b> | 06/30/2017 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

**Design and construct approximately 3,000 lf of 16-inch pipeline.**

| Funding Sources           | Total            | 2016/17          | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|---------------------------|------------------|------------------|---------|---------|---------|---------|---------|--------|
| Water - Improvement Bonds | \$817,421        | \$817,421        |         |         |         |         |         |        |
|                           | <b>\$817,421</b> | <b>\$817,421</b> |         |         |         |         |         |        |

**Operating Impacts**

|                   |                 |  |                |                |                |                |                |                 |
|-------------------|-----------------|--|----------------|----------------|----------------|----------------|----------------|-----------------|
| Operations Labor  | \$15,433        |  | \$1,253        | \$1,595        | \$1,642        | \$1,692        | \$1,742        | \$7,509         |
| Maintenance Labor | \$36,009        |  | \$2,923        | \$3,721        | \$3,832        | \$3,947        | \$4,066        | \$17,520        |
| Supplies          | \$4,771         |  | \$418          | \$516          | \$524          | \$532          | \$540          | \$2,241         |
| Small Capital     | \$4,771         |  | \$418          | \$516          | \$524          | \$532          | \$540          | \$2,241         |
| Utilities         | \$14,310        |  | \$1,253        | \$1,548        | \$1,572        | \$1,595        | \$1,619        | \$6,723         |
|                   | <b>\$75,294</b> |  | <b>\$6,265</b> | <b>\$7,896</b> | <b>\$8,094</b> | <b>\$8,298</b> | <b>\$8,507</b> | <b>\$36,234</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**MOHAWK LIFT STATION RETIREMENT**

**Project No: U0028**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>         | Adrian Edwards   | <b>Projected Start Date</b>       | 01/01/2015 |
| <b>Total Projected Cost:</b>    | \$256,650        | <b>Projected Completion Date:</b> | 06/30/2017 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

This project will remove the lift station and replace its function with a gravity sewer line consisting of 4,000 lf of 8 inch and 500 lf of 16 inch casing that will tie into an existing 8-inch sewer line at Galleria Drive and Mohawk Drive intersection that ties into a 24-inch gravity main.

| Funding Sources                  | Total            | 2016/17          | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|----------------------------------|------------------|------------------|---------|---------|---------|---------|---------|--------|
| Wastewater - Rehab & Replacement | \$256,650        | \$256,650        |         |         |         |         |         |        |
|                                  | <b>\$256,650</b> | <b>\$256,650</b> |         |         |         |         |         |        |

**Operating Impacts**

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**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**R-4A RESERVOIR REHABILITATION**

**Project No: U0031**

|                               |                  |                                   |            |
|-------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b> | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>       | Jeremy Lustig    | <b>Projected Start Date</b>       | 01/01/2016 |
| <b>Total Projected Cost:</b>  | \$1,824,089      | <b>Projected Completion Date:</b> | 06/30/2017 |

**Prior Years ActualCosts:**

**Project Description:**

Rehabilitate reservoir 4A (2 MG) including upgrades to the existing overflow device as well as modifications to the outlet of R4A; minor repairs and recoat/resurface the reservoir.

| Funding Sources             | Total              | 2016/17            | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|-----------------------------|--------------------|--------------------|---------|---------|---------|---------|---------|--------|
| Water - Rehab & Replacement | \$1,824,089        | \$1,824,089        |         |         |         |         |         |        |
|                             | <b>\$1,824,089</b> | <b>\$1,824,089</b> |         |         |         |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**STEPHANIE LIFT STATION EXPANSION / UPGRADE**

**Project No: U0032**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>         | Shimin Luo       | <b>Projected Start Date</b>       | 12/01/2015 |
| <b>Total Projected Cost:</b>    | \$2,673,295      | <b>Projected Completion Date:</b> | 06/30/2019 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

**Design and construct modifications to increase capacity from 1.22 to 2.98; replace the existing pump room, wet well and force main; and install odor control equipment improvements.**

| Funding Sources                     | Total              | 2016/17          | 2017/18          | 2018/19            | 2019/20 | 2020/21 | 2021/22 | Future |
|-------------------------------------|--------------------|------------------|------------------|--------------------|---------|---------|---------|--------|
| Wastewater - Development Enterprise | \$2,673,295        | \$481,267        | \$864,361        | \$1,327,667        |         |         |         |        |
|                                     | <b>\$2,673,295</b> | <b>\$481,267</b> | <b>\$864,361</b> | <b>\$1,327,667</b> |         |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**PITTMAN/BOULDER HWY WATER LINE REPLACEMENT**

**Project No: U0033**

|                                 |                         |                                   |                   |
|---------------------------------|-------------------------|-----------------------------------|-------------------|
| <b>Submitting Department:</b>   | <b>Utility Services</b> | <b>Project Status:</b>            | <b>Active</b>     |
| <b>Project Manager:</b>         | <b>Field Operations</b> | <b>Projected Start Date</b>       | <b>07/01/2015</b> |
| <b>Total Projected Cost:</b>    | <b>\$3,297,134</b>      | <b>Projected Completion Date:</b> | <b>01/31/2018</b> |
| <b>Prior Years ActualCosts:</b> |                         |                                   |                   |

**Project Description:**

Design and construct replacement of approximately 12,150 lf of AC pipe with 8-inch PVC pipe; and install 6,000 lf of 12-inch PVC main, 262 water service laterals, and 28 fire hydrants and assemblies.

| <b>Funding Sources</b>      | <b>Total</b>       | <b>2016/17</b>     | <b>2017/18</b>     | <b>2018/19</b> | <b>2019/20</b> | <b>2020/21</b> | <b>2021/22</b> | <b>Future</b> |
|-----------------------------|--------------------|--------------------|--------------------|----------------|----------------|----------------|----------------|---------------|
| Water - Rehab & Replacement | \$3,297,134        | \$1,429,103        | \$1,868,031        |                |                |                |                |               |
|                             | <b>\$3,297,134</b> | <b>\$1,429,103</b> | <b>\$1,868,031</b> |                |                |                |                |               |

**Operating Impacts**

|                   |                  |  |  |                 |                 |                 |                 |                  |
|-------------------|------------------|--|--|-----------------|-----------------|-----------------|-----------------|------------------|
| Operations Labor  | \$59,014         |  |  | \$2,798         | \$7,337         | \$7,557         | \$7,783         | \$33,539         |
| Maintenance Labor | \$137,699        |  |  | \$6,528         | \$17,119        | \$17,632        | \$18,161        | \$78,259         |
| Supplies          | \$18,070         |  |  | \$933           | \$2,340         | \$2,375         | \$2,411         | \$10,011         |
| Utilities         | \$54,210         |  |  | \$2,798         | \$7,021         | \$7,126         | \$7,233         | \$30,032         |
| Small Capital     | \$18,070         |  |  | \$933           | \$2,340         | \$2,375         | \$2,411         | \$10,011         |
|                   | <b>\$287,063</b> |  |  | <b>\$13,990</b> | <b>\$36,157</b> | <b>\$37,065</b> | <b>\$37,999</b> | <b>\$161,852</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**TOWNSITE CAST IRON MAIN REPLACEMENT PLANNING**

**Project No: U0034**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>         | Priscilla Howell | <b>Projected Start Date</b>       | 07/01/2015 |
| <b>Total Projected Cost:</b>    | \$2,780,207      | <b>Projected Completion Date:</b> | 06/30/2018 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Design and construct approximately 1,300 lf of 8-inch water main in Victory Road; abandonment of the 8-inch cast iron water main located in the front yards; reconnection of services and meters; abandonment of 2-inch, 3-inch and 6-inch main in alley ways; installation of approximately 2,700 lf of 8-inch mains and 5,300 lf of 8-inch sewer in cul-de-sacs and 900 lf of service laterals; and replacement of 119 meters.

| Funding Sources                  | Total              | 2016/17         | 2017/18            | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|----------------------------------|--------------------|-----------------|--------------------|---------|---------|---------|---------|--------|
| Wastewater - Rehab & Replacement | \$1,390,103        | \$45,953        | \$1,344,150        |         |         |         |         |        |
| Water - Rehab & Replacement      | \$1,390,104        | \$45,954        | \$1,344,150        |         |         |         |         |        |
|                                  | <b>\$2,780,207</b> | <b>\$91,907</b> | <b>\$2,688,300</b> |         |         |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**WRF SECONDARY CLARIFIERS 1 AND 2**

**Project No: U0035**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Adrian Edwards   | <b>Projected Start Date</b>       | 11/01/2020 |
| <b>Total Projected Cost:</b>    | \$1,116,571      | <b>Projected Completion Date:</b> | 01/31/2023 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Replace all metal components in Clarifiers No. 1 and No. 2; and, procure and install equipment to upgrade from conventional to spiral sludge plows.

| Funding Sources                  | Total              | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21         | 2021/22          | Future           |
|----------------------------------|--------------------|---------|---------|---------|---------|-----------------|------------------|------------------|
| Wastewater - Rehab & Replacement | \$1,116,571        |         |         |         |         | \$21,667        | \$700,565        | \$394,339        |
|                                  | <b>\$1,116,571</b> |         |         |         |         | <b>\$21,667</b> | <b>\$700,565</b> | <b>\$394,339</b> |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**WRF SITE SECURITY IMPROVEMENTS**

**Project No: U0037**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Adrian Edwards   | <b>Projected Start Date</b>       | 11/01/2017 |
| <b>Total Projected Cost:</b>    | \$2,507,754      | <b>Projected Completion Date:</b> | 06/30/2020 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Design and construct approximately 8,500 lf perimeter 8-ft block wall with top-mounted wrought iron prods at the Kurt R. Segler Water Reclamation Facility that will match the existing wall to the south of the USSB and surround the existing mechanical plant process and the area designated for future plant expansion.

| Funding Sources                | Total              | 2016/17 | 2017/18         | 2018/19          | 2019/20            | 2020/21 | 2021/22 | Future |
|--------------------------------|--------------------|---------|-----------------|------------------|--------------------|---------|---------|--------|
| Wastewater - Improvement Bonds | \$2,507,754        |         | \$26,667        | \$920,388        | \$1,560,699        |         |         |        |
|                                | <b>\$2,507,754</b> |         | <b>\$26,667</b> | <b>\$920,388</b> | <b>\$1,560,699</b> |         |         |        |

**Operating Impacts**

|                   |                  |  |  |  |  |                |                 |                  |
|-------------------|------------------|--|--|--|--|----------------|-----------------|------------------|
| Operations Labor  | \$46,647         |  |  |  |  | \$1,821        | \$8,443         | \$36,383         |
| Maintenance Labor | \$108,845        |  |  |  |  | \$4,249        | \$19,701        | \$84,895         |
| Supplies          | \$14,082         |  |  |  |  | \$607          | \$2,615         | \$10,860         |
| Utilities         | \$42,247         |  |  |  |  | \$1,821        | \$7,846         | \$32,580         |
| Small Capital     | \$14,082         |  |  |  |  | \$607          | \$2,615         | \$10,860         |
|                   | <b>\$225,903</b> |  |  |  |  | <b>\$9,105</b> | <b>\$41,220</b> | <b>\$175,578</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**R-7A RESERVOIR**

**Project No: U0038**

**Submitting Department:** Utility Services      **Project Status:** Proposed  
**Project Manager:** Don Pelissier      **Projected Start Date:** 07/01/2020  
**Total Projected Cost:** \$4,653,750      **Projected Completion Date:** 03/31/2023

**Prior Years Actual Costs:**

**Project Description:**

**Design and construct a 2 MG reservoir and associated appurtenances.**

| <b>Funding Sources</b>    | <b>Total</b>       | <b>2016/17</b> | <b>2017/18</b> | <b>2018/19</b> | <b>2019/20</b> | <b>2020/21</b>   | <b>2021/22</b>     | <b>Future</b>      |
|---------------------------|--------------------|----------------|----------------|----------------|----------------|------------------|--------------------|--------------------|
| Water - Improvement Bonds | \$4,653,750        |                |                |                |                | \$168,000        | \$2,263,875        | \$2,221,875        |
|                           | <b>\$4,653,750</b> |                |                |                |                | <b>\$168,000</b> | <b>\$2,263,875</b> | <b>\$2,221,875</b> |

**Operating Impacts**

|                   |                  |  |  |  |  |  |  |                  |
|-------------------|------------------|--|--|--|--|--|--|------------------|
| Operations Labor  | \$57,344         |  |  |  |  |  |  | \$57,344         |
| Maintenance Labor | \$133,801        |  |  |  |  |  |  | \$133,801        |
| Small Capital     | \$17,241         |  |  |  |  |  |  | \$17,241         |
| Supplies          | \$17,241         |  |  |  |  |  |  | \$17,241         |
| Utilities         | \$51,723         |  |  |  |  |  |  | \$51,723         |
|                   | <b>\$277,350</b> |  |  |  |  |  |  | <b>\$277,350</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**R-8A RESERVOIR**

**Project No: U0040**

|                                 |                         |                                   |                   |
|---------------------------------|-------------------------|-----------------------------------|-------------------|
| <b>Submitting Department:</b>   | <b>Utility Services</b> | <b>Project Status:</b>            | <b>Proposed</b>   |
| <b>Project Manager:</b>         | <b>Don Pelissier</b>    | <b>Projected Start Date</b>       | <b>07/01/2021</b> |
| <b>Total Projected Cost:</b>    | <b>\$7,906,250</b>      | <b>Projected Completion Date:</b> | <b>06/30/2023</b> |
| <b>Prior Years ActualCosts:</b> |                         |                                   |                   |

**Project Description:**  
**Design and construct a 5 MG reservoir and associated appurtenances, and demolition of R-8 (3 MG).**

| <b>Funding Sources</b>    | <b>Total</b>       | <b>2016/17</b> | <b>2017/18</b> | <b>2018/19</b> | <b>2019/20</b> | <b>2020/21</b> | <b>2021/22</b>   | <b>Future</b>      |
|---------------------------|--------------------|----------------|----------------|----------------|----------------|----------------|------------------|--------------------|
| Water - Improvement Bonds | \$7,906,250        |                |                |                |                |                | \$350,000        | \$7,556,250        |
|                           | <b>\$7,906,250</b> |                |                |                |                |                | <b>\$350,000</b> | <b>\$7,556,250</b> |

**Operating Impacts**

|                   |                  |  |  |  |  |  |  |                  |
|-------------------|------------------|--|--|--|--|--|--|------------------|
| Operations Labor  | \$58,294         |  |  |  |  |  |  | \$58,294         |
| Maintenance Labor | \$136,018        |  |  |  |  |  |  | \$136,018        |
| Supplies          | \$17,152         |  |  |  |  |  |  | \$17,152         |
| Utilities         | \$51,455         |  |  |  |  |  |  | \$51,455         |
| Small Capital     | \$17,152         |  |  |  |  |  |  | \$17,152         |
|                   | <b>\$280,071</b> |  |  |  |  |  |  | <b>\$280,071</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**MANGANESE PARK SEWER REPLACEMENT**

**Project No: U0041**

|                               |                  |                                   |            |
|-------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b> | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>       | John Day         | <b>Projected Start Date</b>       | 09/01/2014 |
| <b>Total Projected Cost:</b>  | \$605,559        | <b>Projected Completion Date:</b> | 06/30/2017 |

**Prior Years ActualCosts:**

**Project Description:**

Design and construct abandonment and replacement of 6-inch VCP mains located at back property lines with approximately 2,500 lf of 8-inch sewer line in the street, 84 new service laterals that tie into the front of the homes, and nine (9) 48-inch manholes.

| Funding Sources                  | Total            | 2016/17          | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|----------------------------------|------------------|------------------|---------|---------|---------|---------|---------|--------|
| Wastewater - Rehab & Replacement | \$605,559        | \$605,559        |         |         |         |         |         |        |
|                                  | <b>\$605,559</b> | <b>\$605,559</b> |         |         |         |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**WINDMILL CROSSING SEWER BYPASS**

**Project No: U0042**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>         | John Day         | <b>Projected Start Date</b>       | 11/01/2014 |
| <b>Total Projected Cost:</b>    | \$651,258        | <b>Projected Completion Date:</b> | 10/01/2016 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Design and construct 1,700 lf of 8-inch sewer along Arroyo Grande Boulevard, five (5) 60-inch manholes, and in-place abandonment of an 8-in sewer traversing the Windmill Crossing development. Right-of-way negotiations with the railroad will be required.

| Funding Sources                | Total            | 2016/17          | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|--------------------------------|------------------|------------------|---------|---------|---------|---------|---------|--------|
| Wastewater - Improvement Bonds | \$651,258        | \$651,258        |         |         |         |         |         |        |
|                                | <b>\$651,258</b> | <b>\$651,258</b> |         |         |         |         |         |        |

**Operating Impacts**

|                   |                 |                |                |                |                |                |                |                 |
|-------------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|
| Supplies          | \$3,111         | \$200          | \$305          | \$309          | \$314          | \$318          | \$323          | \$1,342         |
| Operations Labor  | \$10,017        | \$600          | \$927          | \$955          | \$983          | \$1,013        | \$1,043        | \$4,496         |
| Maintenance Labor | \$23,375        | \$1,400        | \$2,163        | \$2,228        | \$2,295        | \$2,364        | \$2,434        | \$10,491        |
| Utilities         | \$9,333         | \$600          | \$914          | \$927          | \$941          | \$955          | \$970          | \$4,026         |
| Small Capital     | \$3,111         | \$200          | \$305          | \$309          | \$314          | \$318          | \$323          | \$1,342         |
|                   | <b>\$48,947</b> | <b>\$3,000</b> | <b>\$4,614</b> | <b>\$4,728</b> | <b>\$4,847</b> | <b>\$4,968</b> | <b>\$5,093</b> | <b>\$21,697</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**WTP 2007 GRAVITY TRANSMISSION MAIN REPLACEMENT**

**Project No: U0045**

|                                 |                         |                                   |                   |
|---------------------------------|-------------------------|-----------------------------------|-------------------|
| <b>Submitting Department:</b>   | <b>Utility Services</b> | <b>Project Status:</b>            | <b>Proposed</b>   |
| <b>Project Manager:</b>         | <b>Priscilla Howell</b> | <b>Projected Start Date</b>       | <b>11/01/2019</b> |
| <b>Total Projected Cost:</b>    | <b>\$1,139,558</b>      | <b>Projected Completion Date:</b> | <b>06/30/2022</b> |
| <b>Prior Years ActualCosts:</b> |                         |                                   |                   |

**Project Description:**

**Design and construct replacement of approximately 2,350 lf of 20-inch pipeline.**

| <b>Funding Sources</b>      | <b>Total</b>       | <b>2016/17</b> | <b>2017/18</b> | <b>2018/19</b> | <b>2019/20</b> | <b>2020/21</b>  | <b>2021/22</b>     | <b>Future</b> |
|-----------------------------|--------------------|----------------|----------------|----------------|----------------|-----------------|--------------------|---------------|
| Water - Rehab & Replacement | \$1,139,558        |                |                |                | \$7,817        | \$39,083        | \$1,092,658        |               |
|                             | <b>\$1,139,558</b> |                |                |                | <b>\$7,817</b> | <b>\$39,083</b> | <b>\$1,092,658</b> |               |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**LAS VEGAS BLVD./VOLUNTEER LVVWD INTERCONNECT**

**Project No: U0051**

|                                 |                      |                                   |            |
|---------------------------------|----------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services     | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>         | Robert Woodson, P.E. | <b>Projected Start Date</b>       | 01/01/2011 |
| <b>Total Projected Cost:</b>    | \$501,862            | <b>Projected Completion Date:</b> | 08/01/2016 |
| <b>Prior Years ActualCosts:</b> |                      |                                   |            |

**Project Description:**

**This project is to provide an interconnection via a metered vault with pressure sustaining valve to the City's 2630 24-inch pipe in Volunteer Boulevard.**

| Funding Sources           | Total            | 2016/17          | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|---------------------------|------------------|------------------|---------|---------|---------|---------|---------|--------|
| Water - Improvement Bonds | \$501,862        | \$501,862        |         |         |         |         |         |        |
|                           | <b>\$501,862</b> | <b>\$501,862</b> |         |         |         |         |         |        |

**Operating Impacts**

|                   |                  |                 |                 |                 |                 |                 |                 |                 |
|-------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Operations Labor  | \$32,234         | \$2,378         | \$2,939         | \$3,027         | \$3,118         | \$3,211         | \$3,308         | \$14,253        |
| Maintenance Labor | \$75,213         | \$5,548         | \$6,857         | \$7,063         | \$7,275         | \$7,493         | \$7,718         | \$33,259        |
| Supplies          | \$10,021         | \$793           | \$965           | \$980           | \$995           | \$1,009         | \$1,025         | \$4,254         |
| Utilities         | \$30,063         | \$2,378         | \$2,896         | \$2,940         | \$2,984         | \$3,028         | \$3,074         | \$12,763        |
| Small Capital     | \$10,021         | \$793           | \$965           | \$980           | \$995           | \$1,009         | \$1,025         | \$4,254         |
|                   | <b>\$157,552</b> | <b>\$11,890</b> | <b>\$14,622</b> | <b>\$14,990</b> | <b>\$15,367</b> | <b>\$15,750</b> | <b>\$16,150</b> | <b>\$68,783</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**R-10A RESERVOIR**

**Project No: U0059**

**Submitting Department:** Utility Services      **Project Status:** Active  
**Project Manager:** Don Pelissier      **Projected Start Date:** 07/01/2014  
**Total Projected Cost:** \$4,408,862      **Projected Completion Date:** 11/30/2016  
**Prior Years ActualCosts:**

**Project Description:**

**Design and construct a 3 MG, above ground, potable storage reservoir adjacent to the existing R-10 reservoir.**

| <b>Funding Sources</b>    | <b>Total</b>       | <b>2016/17</b>     | <b>2017/18</b> | <b>2018/19</b> | <b>2019/20</b> | <b>2020/21</b> | <b>2021/22</b> | <b>Future</b> |
|---------------------------|--------------------|--------------------|----------------|----------------|----------------|----------------|----------------|---------------|
| Water - Improvement Bonds | \$4,408,862        | \$4,408,862        |                |                |                |                |                |               |
|                           | <b>\$4,408,862</b> | <b>\$4,408,862</b> |                |                |                |                |                |               |

**Operating Impacts**

|                   |                  |                 |                 |                 |                 |                 |                 |                  |
|-------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|
| Operations Labor  | \$163,350        | \$8,625         | \$15,230        | \$15,687        | \$16,158        | \$16,642        | \$17,142        | \$73,866         |
| Maintenance Labor | \$381,149        | \$20,126        | \$35,537        | \$36,603        | \$37,701        | \$38,832        | \$39,997        | \$172,353        |
| Supplies          | \$50,698         | \$2,875         | \$5,003         | \$5,078         | \$5,154         | \$5,231         | \$5,310         | \$22,047         |
| Utilities         | \$152,094        | \$8,625         | \$15,008        | \$15,233        | \$15,462        | \$15,694        | \$15,929        | \$66,143         |
| Small Capital     | \$50,698         | \$2,875         | \$5,003         | \$5,078         | \$5,154         | \$5,231         | \$5,310         | \$22,047         |
|                   | <b>\$797,989</b> | <b>\$43,126</b> | <b>\$75,781</b> | <b>\$77,679</b> | <b>\$79,629</b> | <b>\$81,630</b> | <b>\$83,688</b> | <b>\$356,456</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**R-5A RESERVOIR (2610 REFUNDING)**

**Project No: U0060**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>         | Shimin Luo       | <b>Projected Start Date</b>       | 07/01/2014 |
| <b>Total Projected Cost:</b>    | \$2,528,114      | <b>Projected Completion Date:</b> | 10/01/2016 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Design and construction of a 1 million gallon reservoir adjacent to R-5.

| Funding Sources           | Total              | 2016/17            | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|---------------------------|--------------------|--------------------|---------|---------|---------|---------|---------|--------|
| Water - Improvement Bonds | \$2,528,114        | \$2,528,114        |         |         |         |         |         |        |
|                           | <b>\$2,528,114</b> | <b>\$2,528,114</b> |         |         |         |         |         |        |

**Operating Impacts**

|                   |                  |                 |                 |                 |                 |                 |                 |                  |
|-------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|
| Operations Labor  | \$76,668         | \$4,592         | \$7,095         | \$7,307         | \$7,527         | \$7,753         | \$7,985         | \$34,409         |
| Maintenance Labor | \$178,891        | \$10,715        | \$16,554        | \$17,051        | \$17,562        | \$18,089        | \$18,632        | \$80,288         |
| Small Capital     | \$23,807         | \$1,531         | \$2,330         | \$2,365         | \$2,401         | \$2,437         | \$2,473         | \$10,270         |
| Supplies          | \$23,807         | \$1,531         | \$2,330         | \$2,365         | \$2,401         | \$2,437         | \$2,473         | \$10,270         |
| Utilities         | \$71,425         | \$4,592         | \$6,991         | \$7,096         | \$7,203         | \$7,311         | \$7,420         | \$30,812         |
|                   | <b>\$374,598</b> | <b>\$22,961</b> | <b>\$35,300</b> | <b>\$36,184</b> | <b>\$37,094</b> | <b>\$38,027</b> | <b>\$38,983</b> | <b>\$166,049</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**SW HENDERSON UTILITY ANNEX RIGHT-OF-WAY**

**Project No: U0063**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Don Pelissier    | <b>Projected Start Date</b>       | 07/01/2019 |
| <b>Total Projected Cost:</b>    | \$862,501        | <b>Projected Completion Date:</b> | 10/31/2020 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Right-of-way acquisition of approximately 10 acres.

| Funding Sources                     | Total            | 2016/17 | 2017/18 | 2018/19 | 2019/20          | 2020/21          | 2021/22 | Future |
|-------------------------------------|------------------|---------|---------|---------|------------------|------------------|---------|--------|
| Wastewater - Development Enterprise | \$431,250        |         |         |         | \$377,344        | \$53,906         |         |        |
| Water - Development Enterprise      | \$431,251        |         |         |         | \$377,344        | \$53,907         |         |        |
|                                     | <b>\$862,501</b> |         |         |         | <b>\$754,688</b> | <b>\$107,813</b> |         |        |

**Operating Impacts**

|  |
|--|
|  |
|  |
|  |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**LLV FALLS GC RAW WATER ELECTRICAL/SCADA UPGRADES**

**Project No: U0066**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Jeremy Lustig    | <b>Projected Start Date</b>       | 01/01/2017 |
| <b>Total Projected Cost:</b>    | \$127,523        | <b>Projected Completion Date:</b> | 06/30/2018 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Design and install additional power and SCADA/radio controls to the Fall's Golf Course existing raw water meter and flow control valve.

| Funding Sources           | Total            | 2016/17         | 2017/18          | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|---------------------------|------------------|-----------------|------------------|---------|---------|---------|---------|--------|
| Water - Improvement Bonds | \$127,523        | \$10,000        | \$117,523        |         |         |         |         |        |
|                           | <b>\$127,523</b> | <b>\$10,000</b> | <b>\$117,523</b> |         |         |         |         |        |

**Operating Impacts**

|                   |                |  |  |              |              |              |              |                |
|-------------------|----------------|--|--|--------------|--------------|--------------|--------------|----------------|
| Operations Labor  | \$989          |  |  | \$47         | \$123        | \$127        | \$130        | \$562          |
| Small Capital     | \$909          |  |  | \$47         | \$118        | \$119        | \$121        | \$504          |
| Maintenance Labor | \$1,979        |  |  | \$94         | \$246        | \$253        | \$261        | \$1,125        |
| Supplies          | \$909          |  |  | \$47         | \$118        | \$119        | \$121        | \$504          |
|                   | <b>\$4,786</b> |  |  | <b>\$235</b> | <b>\$605</b> | <b>\$618</b> | <b>\$633</b> | <b>\$2,695</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**LLV RAW WATER SCADA IMPROVEMENTS**

**Project No: U0067**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Jeremy Lustig    | <b>Projected Start Date</b>       | 01/01/2017 |
| <b>Total Projected Cost:</b>    | \$510,094        | <b>Projected Completion Date:</b> | 06/30/2018 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Evaluate existing SCADA system consisting of the raw lake fill sleeve valve, Southshore lake water pumping station, Southshore raw water flow control valve, raw water waterfall flow control valve, upgraded Falls golf course raw water flow control valve, and any future components; and design and install communication and control of the Lake Las Vegas Raw Water and Lake Water systems.

| Funding Sources           | Total            | 2016/17         | 2017/18          | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|---------------------------|------------------|-----------------|------------------|---------|---------|---------|---------|--------|
| Water - Improvement Bonds | \$510,094        | \$40,000        | \$470,094        |         |         |         |         |        |
|                           | <b>\$510,094</b> | <b>\$40,000</b> | <b>\$470,094</b> |         |         |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**SUNRISE TRAILER ESTATES WATER AND SEWER MAIN REPLACEMENTS**

**Project No: U0071**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>         | John Day         | <b>Projected Start Date</b>       | 01/01/2016 |
| <b>Total Projected Cost:</b>    | \$2,947,191      | <b>Projected Completion Date:</b> | 06/30/2018 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Design and construct replacement or rehabilitation of the existing 6-inch AC water lines in the Sunrise Trailer Estates, with approximately 6,200 lf of 8-in sewer line, 8,500 lf of 8-inch water line, 23 manholes, 10 fire hydrant assemblies, and 185 each sewer and water service connections.

| Funding Sources                  | Total              | 2016/17          | 2017/18            | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|----------------------------------|--------------------|------------------|--------------------|---------|---------|---------|---------|--------|
| Water - Rehab & Replacement      | \$1,473,596        | \$414,899        | \$1,058,697        |         |         |         |         |        |
| Wastewater - Rehab & Replacement | \$1,473,595        | \$414,899        | \$1,058,696        |         |         |         |         |        |
|                                  | <b>\$2,947,191</b> | <b>\$829,798</b> | <b>\$2,117,393</b> |         |         |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**TOWNSITE CAST IRON MAIN REPLACEMENT PHASE 2**

**Project No: U0072**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | John Day         | <b>Projected Start Date</b>       | 07/01/2017 |
| <b>Total Projected Cost:</b>    | \$4,139,463      | <b>Projected Completion Date:</b> | 01/31/2020 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Design and construct replacement of 2-inch, 3-inch and 6-inch cast iron water mains and 6-inch clay sewers located in alleys with approximately 4,800 lf of 8-inch water main, 4,800 lf of 8-inch and 1,500 lf of 12-inch sewer main in public streets; 12 fire hydrant assemblies, and 210 service connection relocations.

| Funding Sources                  | Total              | 2016/17 | 2017/18          | 2018/19            | 2019/20          | 2020/21 | 2021/22 | Future |
|----------------------------------|--------------------|---------|------------------|--------------------|------------------|---------|---------|--------|
| Wastewater - Rehab & Replacement | \$2,483,678        |         | \$129,900        | \$1,765,333        | \$588,445        |         |         |        |
| Water - Rehab & Replacement      | \$1,655,785        |         | \$86,600         | \$1,176,889        | \$392,296        |         |         |        |
|                                  | <b>\$4,139,463</b> |         | <b>\$216,500</b> | <b>\$2,942,222</b> | <b>\$980,741</b> |         |         |        |

**Operating Impacts**







**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**ANTELOPE VALLEY PRESSURE ZONE CONVERSION**

**Project No: U0077**

|                               |                      |                                   |            |
|-------------------------------|----------------------|-----------------------------------|------------|
| <b>Submitting Department:</b> | Utility Services     | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>       | Ali R. Zenhari, P.E. | <b>Projected Start Date</b>       | 01/01/2016 |
| <b>Total Projected Cost:</b>  | \$415,546            | <b>Projected Completion Date:</b> | 04/01/2017 |

**Prior Years ActualCosts:**

**Project Description:**

Design and construct improvements to the existing water pressure to approximately 68 lots in Antelope Valley by converting portions of the 2240 PZ to 2370 PZ by installing 68 individual PRVs and approximately 200 LF of 8-inch PVC waterline and ancillary appurtenances.

| Funding Sources           | Total            | 2016/17          | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|---------------------------|------------------|------------------|---------|---------|---------|---------|---------|--------|
| Water - Improvement Bonds | \$415,546        | \$415,546        |         |         |         |         |         |        |
|                           | <b>\$415,546</b> | <b>\$415,546</b> |         |         |         |         |         |        |

**Operating Impacts**

|                   |                 |  |              |                |                |                |                |                 |
|-------------------|-----------------|--|--------------|----------------|----------------|----------------|----------------|-----------------|
| Small Capital     | \$3,238         |  | \$61         | \$377          | \$382          | \$388          | \$394          | \$1,636         |
| Maintenance Labor | \$7,020         |  | \$122        | \$776          | \$799          | \$823          | \$848          | \$3,652         |
| Supplies          | \$6,473         |  | \$122        | \$753          | \$764          | \$776          | \$788          | \$3,270         |
| Operations Labor  | \$3,509         |  | \$61         | \$388          | \$399          | \$411          | \$424          | \$1,826         |
|                   | <b>\$20,240</b> |  | <b>\$366</b> | <b>\$2,294</b> | <b>\$2,344</b> | <b>\$2,398</b> | <b>\$2,454</b> | <b>\$10,384</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**WRF UTILITY WATER UPGRADES AND RELIABILITY ENHANCEMENTS**

**Project No: U0086**

**Submitting Department:** Utility Services **Project Status:** Active  
**Project Manager:** Adrian Edwards **Projected Start Date:** 08/01/2012  
**Total Projected Cost:** \$436,166 **Projected Completion Date:** 05/31/2017  
**Prior Years ActualCosts:**

**Project Description:**

**Kurt R. Segler Water Reclamation Facility (KRSWRF) Utility Water Upgrades and Reliability Enhancement. This project will replace the original non potable utility water back up system with a secondary reclaimed water source. This work includes the installation of variable frequency drives on the existing reclaimed utility water pumps. Engineering will be contracted, COH staff will purchase equipment and perform installation.**

| <b>Funding Sources</b>         | <b>Total</b>     | <b>2016/17</b>   | <b>2017/18</b> | <b>2018/19</b> | <b>2019/20</b> | <b>2020/21</b> | <b>2021/22</b> | <b>Future</b> |
|--------------------------------|------------------|------------------|----------------|----------------|----------------|----------------|----------------|---------------|
| Wastewater - Improvement Bonds | \$436,166        | \$436,166        |                |                |                |                |                |               |
|                                | <b>\$436,166</b> | <b>\$436,166</b> |                |                |                |                |                |               |

**Operating Impacts**

|                   |                 |  |              |                |                |                |                |                 |
|-------------------|-----------------|--|--------------|----------------|----------------|----------------|----------------|-----------------|
| Operations Labor  | \$7,139         |  | \$63         | \$796          | \$820          | \$844          | \$869          | \$3,747         |
| Maintenance Labor | \$16,656        |  | \$146        | \$1,857        | \$1,912        | \$1,970        | \$2,029        | \$8,742         |
| Supplies          | \$2,192         |  | \$21         | \$258          | \$261          | \$265          | \$269          | \$1,118         |
| Utilities         | \$6,579         |  | \$63         | \$773          | \$784          | \$796          | \$808          | \$3,355         |
| Small Capital     | \$2,192         |  | \$21         | \$258          | \$261          | \$265          | \$269          | \$1,118         |
|                   | <b>\$34,758</b> |  | <b>\$314</b> | <b>\$3,942</b> | <b>\$4,038</b> | <b>\$4,140</b> | <b>\$4,244</b> | <b>\$18,080</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**BERMUDA RESERVOIR INTERCONNECTION PHASE 1**

**Project No: U0087**

|                                 |                               |                                   |                   |
|---------------------------------|-------------------------------|-----------------------------------|-------------------|
| <b>Submitting Department:</b>   | <b>Utility Services</b>       | <b>Project Status:</b>            | <b>Active</b>     |
| <b>Project Manager:</b>         | <b>Donald Pelissier, P.E.</b> | <b>Projected Start Date</b>       | <b>11/01/2012</b> |
| <b>Total Projected Cost:</b>    | <b>\$1,006,312</b>            | <b>Projected Completion Date:</b> | <b>06/30/2018</b> |
| <b>Prior Years ActualCosts:</b> |                               |                                   |                   |

**Project Description:**

**Design and construction of the Las Vegas Valley Water District infrastructure to extend from the connection to the existing Bermuda Reservoir pipeline, to the western boundary of the Reservoir site, approximately 835 feet south of the East Bruner Avenue centerline.**

| <b>Funding Sources</b>         | <b>Total</b>       | <b>2016/17</b>   | <b>2017/18</b>   | <b>2018/19</b> | <b>2019/20</b> | <b>2020/21</b> | <b>2021/22</b> | <b>Future</b> |
|--------------------------------|--------------------|------------------|------------------|----------------|----------------|----------------|----------------|---------------|
| Water - Development Enterprise | \$1,006,312        | \$616,664        | \$389,648        |                |                |                |                |               |
|                                | <b>\$1,006,312</b> | <b>\$616,664</b> | <b>\$389,648</b> |                |                |                |                |               |

**Operating Impacts**

|                   |                  |  |  |                |                 |                 |                 |                 |
|-------------------|------------------|--|--|----------------|-----------------|-----------------|-----------------|-----------------|
| Operations Labor  | \$21,081         |  |  | \$1,188        | \$2,596         | \$2,674         | \$2,754         | \$11,869        |
| Maintenance Labor | \$49,192         |  |  | \$2,772        | \$6,058         | \$6,240         | \$6,427         | \$27,695        |
| Small Capital     | \$6,461          |  |  | \$396          | \$828           | \$841           | \$853           | \$3,543         |
| Supplies          | \$6,461          |  |  | \$396          | \$828           | \$841           | \$853           | \$3,543         |
| Utilities         | \$19,384         |  |  | \$1,188        | \$2,485         | \$2,522         | \$2,560         | \$10,629        |
|                   | <b>\$102,579</b> |  |  | <b>\$5,940</b> | <b>\$12,795</b> | <b>\$13,118</b> | <b>\$13,447</b> | <b>\$57,279</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**WRF EFFLUENT PIPING UPGRADES**

**Project No: U0088**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>         | Adrian Edwards   | <b>Projected Start Date</b>       | 01/01/2013 |
| <b>Total Projected Cost:</b>    | \$332,846        | <b>Projected Completion Date:</b> | 09/01/2016 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

This project will install piping and valves to allow treated effluent returning downhill from the SWRF to be diverted to Pond 13 or the Bird Viewing Preserve. A valve vault with two valves would have to be constructed North of the Green Valley Sleeve Valve vault at the WRF. About 80 linear feet of piping would travel east and connect with the existing pipe to Pond 13.

| Funding Sources                | Total            | 2016/17          | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|--------------------------------|------------------|------------------|---------|---------|---------|---------|---------|--------|
| Wastewater - Improvement Bonds | \$332,846        | \$332,846        |         |         |         |         |         |        |
|                                | <b>\$332,846</b> | <b>\$332,846</b> |         |         |         |         |         |        |

**Operating Impacts**

|                   |                 |                |                |                |                |                |                |                 |
|-------------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|
| Operations Labor  | \$8,545         | \$572          | \$785          | \$808          | \$833          | \$858          | \$883          | \$3,806         |
| Maintenance Labor | \$19,938        | \$1,334        | \$1,831        | \$1,886        | \$1,943        | \$2,001        | \$2,061        | \$8,882         |
| Supplies          | \$2,657         | \$191          | \$258          | \$262          | \$266          | \$270          | \$274          | \$1,136         |
| Utilities         | \$7,965         | \$572          | \$773          | \$785          | \$797          | \$809          | \$821          | \$3,408         |
| Small Capital     | \$2,657         | \$191          | \$258          | \$262          | \$266          | \$270          | \$274          | \$1,136         |
|                   | <b>\$41,762</b> | <b>\$2,860</b> | <b>\$3,905</b> | <b>\$4,003</b> | <b>\$4,105</b> | <b>\$4,208</b> | <b>\$4,313</b> | <b>\$18,368</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**WWTP 3 POWER SERVICE REHAB**

**Project No: U0089**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>         | Adrian Edwards   | <b>Projected Start Date</b>       | 01/01/2016 |
| <b>Total Projected Cost:</b>    | \$243,706        | <b>Projected Completion Date:</b> | 06/30/2018 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Replace existing 12.47KV power metering and switchgear; 12.47KV to 480V transformer west of the old hydrant shop; and change the NVE metering from 12.47KV to 480V.

| Funding Sources                  | Total            | 2016/17          | 2017/18          | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|----------------------------------|------------------|------------------|------------------|---------|---------|---------|---------|--------|
| Wastewater - Rehab & Replacement | \$243,706        | \$133,835        | \$109,871        |         |         |         |         |        |
|                                  | <b>\$243,706</b> | <b>\$133,835</b> | <b>\$109,871</b> |         |         |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**2630 WEST HENDERSON WATER LINE**

**Project No: U0091**

|                                 |                        |                                   |            |
|---------------------------------|------------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services       | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Donald Pelissier, P.E. | <b>Projected Start Date</b>       | 12/01/2020 |
| <b>Total Projected Cost:</b>    | \$7,891,804            | <b>Projected Completion Date:</b> | 08/31/2023 |
| <b>Prior Years ActualCosts:</b> |                        |                                   |            |

**Project Description:**

Construction of 16 to 24-inch 2630 water pipe network north and south of 42-inch Volunteer Blvd water line (east of Gilespe St. and west of Exec. Airport Drive). Intended to be "interim" improvements until major backbone water supply can be built including Bermuda 2630 PS. Water supply for this network of pipes will be via P-19A and existing PRV 88 (same as M-Resort) until Bermuda 2630 PS and associated transmission facilities are built. Will be included in future W. Henderson 2630/2760 Refunding area.

| Funding Sources                | Total              | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21         | 2021/22          | Future             |
|--------------------------------|--------------------|---------|---------|---------|---------|-----------------|------------------|--------------------|
| Water - Development Enterprise | \$7,891,804        |         |         |         |         | \$59,407        | \$653,473        | \$7,178,924        |
|                                | <b>\$7,891,804</b> |         |         |         |         | <b>\$59,407</b> | <b>\$653,473</b> | <b>\$7,178,924</b> |

**Operating Impacts**

|                   |                  |  |  |  |  |  |  |                  |
|-------------------|------------------|--|--|--|--|--|--|------------------|
| Operations Labor  | \$73,330         |  |  |  |  |  |  | \$73,330         |
| Utilities         | \$66,833         |  |  |  |  |  |  | \$66,833         |
| Maintenance Labor | \$171,103        |  |  |  |  |  |  | \$171,103        |
| Supplies          | \$22,277         |  |  |  |  |  |  | \$22,277         |
| Small Capital     | \$22,277         |  |  |  |  |  |  | \$22,277         |
|                   | <b>\$355,820</b> |  |  |  |  |  |  | <b>\$355,820</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**R-4 RESERVOIR REHABILITATION**

**Project No: U0092**

|                                 |                          |                                   |            |
|---------------------------------|--------------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services         | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Victoria Underwood, P.E. | <b>Projected Start Date</b>       | 10/01/2018 |
| <b>Total Projected Cost:</b>    | \$1,212,229              | <b>Projected Completion Date:</b> | 06/30/2020 |
| <b>Prior Years ActualCosts:</b> |                          |                                   |            |

**Project Description:**

Rehabilitate reservoir 4 (1 MG) including upgrades to overflow device and outlet connection to R-4A, and minor repairs and recoating/resurfacing of the reservoir.

| Funding Sources             | Total              | 2016/17 | 2017/18 | 2018/19          | 2019/20            | 2020/21 | 2021/22 | Future |
|-----------------------------|--------------------|---------|---------|------------------|--------------------|---------|---------|--------|
| Water - Rehab & Replacement | \$1,212,229        |         |         | \$107,700        | \$1,104,529        |         |         |        |
|                             | <b>\$1,212,229</b> |         |         | <b>\$107,700</b> | <b>\$1,104,529</b> |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**R-7 RESERVOIR REHABILITATION**

**Project No: U0093**

|                                 |                          |                                   |            |
|---------------------------------|--------------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services         | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Victoria Underwood, P.E. | <b>Projected Start Date</b>       | 10/01/2019 |
| <b>Total Projected Cost:</b>    | \$1,749,351              | <b>Projected Completion Date:</b> | 06/30/2021 |
| <b>Prior Years ActualCosts:</b> |                          |                                   |            |

**Project Description:**

Rehabilitate reservoir R- 7 (2 MG), including upgrades to the R-7 overflow device, minor repairs, recoating/resurfacing of the reservoir.

| Funding Sources             | Total              | 2016/17 | 2017/18 | 2018/19 | 2019/20          | 2020/21            | 2021/22 | Future |
|-----------------------------|--------------------|---------|---------|---------|------------------|--------------------|---------|--------|
| Water - Rehab & Replacement | \$1,749,351        |         |         |         | \$165,900        | \$1,583,451        |         |        |
|                             | <b>\$1,749,351</b> |         |         |         | <b>\$165,900</b> | <b>\$1,583,451</b> |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**R-12 RESERVOIR REHABILITATION**

**Project No: U0095**

|                                 |                          |                                   |            |
|---------------------------------|--------------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services         | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Victoria Underwood, P.E. | <b>Projected Start Date</b>       | 10/01/2019 |
| <b>Total Projected Cost:</b>    | \$2,503,230              | <b>Projected Completion Date:</b> | 06/30/2021 |
| <b>Prior Years ActualCosts:</b> |                          |                                   |            |

**Project Description:**

Rehabilitate reservoir R-12 (3 MG) , including upgrades to the existing overflow device, minor repairs, and recoating/resurfacing the reservoir.

| Funding Sources             | Total              | 2016/17 | 2017/18 | 2018/19 | 2019/20          | 2020/21            | 2021/22 | Future |
|-----------------------------|--------------------|---------|---------|---------|------------------|--------------------|---------|--------|
| Water - Rehab & Replacement | \$2,503,230        |         |         |         | \$237,600        | \$2,265,630        |         |        |
|                             | <b>\$2,503,230</b> |         |         |         | <b>\$237,600</b> | <b>\$2,265,630</b> |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**RESERVOIR R-3 REPLACEMENT**

**Project No: U0104**

|                               |                     |                                   |            |
|-------------------------------|---------------------|-----------------------------------|------------|
| <b>Submitting Department:</b> | Utility Services    | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>       | Jeremy Lustig, P.E. | <b>Projected Start Date</b>       | 01/01/2016 |
| <b>Total Projected Cost:</b>  | \$2,462,344         | <b>Projected Completion Date:</b> | 02/28/2019 |

**Prior Years ActualCosts:**

**Project Description:**

Design demolition of existing 1 MG reservoir and replace with a new 2 MG concrete reservoir.

| Funding Sources             | Total              | 2016/17          | 2017/18            | 2018/19          | 2019/20 | 2020/21 | 2021/22 | Future |
|-----------------------------|--------------------|------------------|--------------------|------------------|---------|---------|---------|--------|
| Water - Rehab & Replacement | \$2,462,344        | \$195,000        | \$1,662,719        | \$604,625        |         |         |         |        |
|                             | <b>\$2,462,344</b> | <b>\$195,000</b> | <b>\$1,662,719</b> | <b>\$604,625</b> |         |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**WATER PUMPING FACILITY EMERGENCY GENERATOR CONNECTIONS**

**Project No: U0105**

|                                 |                     |                                   |            |
|---------------------------------|---------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services    | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>         | Jeremy Lustig, P.E. | <b>Projected Start Date</b>       | 01/01/2016 |
| <b>Total Projected Cost:</b>    | \$738,985           | <b>Projected Completion Date:</b> | 06/30/2018 |
| <b>Prior Years ActualCosts:</b> |                     |                                   |            |

**Project Description:**

Design and install emergency generator pigtail connections at P-1, P-3A, P-4, P-6, P-14A, P-16, P-19, P-20, and P-31.

| Funding Sources           | Total            | 2016/17          | 2017/18          | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|---------------------------|------------------|------------------|------------------|---------|---------|---------|---------|--------|
| Water - Improvement Bonds | \$738,985        | \$361,251        | \$377,734        |         |         |         |         |        |
|                           | <b>\$738,985</b> | <b>\$361,251</b> | <b>\$377,734</b> |         |         |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**CENTER STREET AREA WATER IMPROVEMENTS**

**Project No: U0108**

**Submitting Department:** Utility Services      **Project Status:** Active  
**Project Manager:** John Day      **Projected Start Date:** 09/01/2014  
**Total Projected Cost:** \$655,677      **Projected Completion Date:** 01/01/2018  
**Prior Years ActualCosts:**

**Project Description:**

Abandon approximately 4,100 feet of existing 12/14-inch AC water pipe (in place) located in residences' back yards and alley between Center Street and Constitution; install approximately 70 new water laterals accordingly to connect to much newer existing 12-inch 2007 PZ PVC water line in Center Street (and Constitution water line as applicable).

| <b>Funding Sources</b>      | <b>Total</b>     | <b>2016/17</b>   | <b>2017/18</b>   | <b>2018/19</b> | <b>2019/20</b> | <b>2020/21</b> | <b>2021/22</b> | <b>Future</b> |
|-----------------------------|------------------|------------------|------------------|----------------|----------------|----------------|----------------|---------------|
| Water - Rehab & Replacement | \$655,677        | \$437,118        | \$218,559        |                |                |                |                |               |
|                             | <b>\$655,677</b> | <b>\$437,118</b> | <b>\$218,559</b> |                |                |                |                |               |

**Operating Impacts**

|                   |                 |  |                |                |                |                |                |                 |
|-------------------|-----------------|--|----------------|----------------|----------------|----------------|----------------|-----------------|
| Operations Labor  | \$14,539        |  | \$615          | \$1,566        | \$1,613        | \$1,661        | \$1,711        | \$7,373         |
| Maintenance Labor | \$33,926        |  | \$1,435        | \$3,654        | \$3,763        | \$3,876        | \$3,993        | \$17,205        |
| Supplies          | \$4,479         |  | \$205          | \$507          | \$514          | \$522          | \$530          | \$2,201         |
| Utilities         | \$13,439        |  | \$615          | \$1,521        | \$1,543        | \$1,567        | \$1,590        | \$6,603         |
| Small Capital     | \$4,479         |  | \$205          | \$507          | \$514          | \$522          | \$530          | \$2,201         |
|                   | <b>\$70,862</b> |  | <b>\$3,075</b> | <b>\$7,755</b> | <b>\$7,947</b> | <b>\$8,148</b> | <b>\$8,354</b> | <b>\$35,583</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**R-5 RESERVOIR REHABILITATION**

**Project No: U0110**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Jeremy Lustig    | <b>Projected Start Date</b>       | 10/01/2016 |
| <b>Total Projected Cost:</b>    | \$560,349        | <b>Projected Completion Date:</b> | 06/30/2018 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Rehabilitate reservoir 5 (.75 MG), minor repairs, and recoat/resurface the reservoir.

| Funding Sources             | Total            | 2016/17         | 2017/18          | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|-----------------------------|------------------|-----------------|------------------|---------|---------|---------|---------|--------|
| Water - Rehab & Replacement | \$560,349        | \$24,570        | \$535,779        |         |         |         |         |        |
|                             | <b>\$560,349</b> | <b>\$24,570</b> | <b>\$535,779</b> |         |         |         |         |        |

**Operating Impacts**





**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**R-20A & RR-20C RESERVOIR REHABILITATION**

**Project No: U0114**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Jeremy Lustig    | <b>Projected Start Date</b>       | 10/01/2019 |
| <b>Total Projected Cost:</b>    | \$2,486,189      | <b>Projected Completion Date:</b> | 06/30/2021 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Rehabilitate reservoirs 20A (2 MG) and RR-20C (1.3 MG), including minor repairs/upgrades and recoating/resurfacing of each reservoir. Design and construct approximately 150 linear feet of 8-inch sewer line from RR-20 to the sewer system.

| Funding Sources                  | Total              | 2016/17 | 2017/18 | 2018/19 | 2019/20          | 2020/21            | 2021/22 | Future |
|----------------------------------|--------------------|---------|---------|---------|------------------|--------------------|---------|--------|
| Water - Rehab & Replacement      | \$1,491,713        |         |         |         | \$141,876        | \$1,349,837        |         |        |
| Wastewater - Rehab & Replacement | \$994,476          |         |         |         | \$94,584         | \$899,892          |         |        |
|                                  | <b>\$2,486,189</b> |         |         |         | <b>\$236,460</b> | <b>\$2,249,729</b> |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**R-26A RESERVOIR REHABILITATION**

**Project No: U0115**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Jeremy Lustig    | <b>Projected Start Date</b>       | 10/01/2016 |
| <b>Total Projected Cost:</b>    | \$1,052,494      | <b>Projected Completion Date:</b> | 06/30/2018 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Rehabilitate reservoir 26A (.90 MG), including minor repairs and recoating/resurfacing the reservoir.

| Funding Sources             | Total              | 2016/17         | 2017/18          | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|-----------------------------|--------------------|-----------------|------------------|---------|---------|---------|---------|--------|
| Water - Rehab & Replacement | \$1,052,494        | \$94,500        | \$957,994        |         |         |         |         |        |
|                             | <b>\$1,052,494</b> | <b>\$94,500</b> | <b>\$957,994</b> |         |         |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**RR-18 RESERVOIR REHABILITATION**

**Project No: U0116**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Adrian Edwards   | <b>Projected Start Date</b>       | 01/01/2018 |
| <b>Total Projected Cost:</b>    | \$1,106,659      | <b>Projected Completion Date:</b> | 06/30/2019 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**  
 Rehabilitate reservoir RR18 (1.5 MG), including minor repairs, and recoating/resurfacing of the reservoir.

| Funding Sources                  | Total              | 2016/17 | 2017/18         | 2018/19            | 2019/20 | 2020/21 | 2021/22 | Future |
|----------------------------------|--------------------|---------|-----------------|--------------------|---------|---------|---------|--------|
| Wastewater - Rehab & Replacement | \$1,106,659        |         | \$52,650        | \$1,054,009        |         |         |         |        |
|                                  | <b>\$1,106,659</b> |         | <b>\$52,650</b> | <b>\$1,054,009</b> |         |         |         |        |

**Operating Impacts**

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**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**R-13 RESERVOIR REHABILITATION**

**Project No: U0117**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Jeremy Lustig    | <b>Projected Start Date</b>       | 10/01/2016 |
| <b>Total Projected Cost:</b>    | \$803,994        | <b>Projected Completion Date:</b> | 06/30/2018 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Rehabilitate reservoir 15 (IMG), including recoate/resurface steel reservoir and minor repairs.

| Funding Sources             | Total            | 2016/17         | 2017/18          | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|-----------------------------|------------------|-----------------|------------------|---------|---------|---------|---------|--------|
| Water - Rehab & Replacement | \$803,994        | \$70,500        | \$733,494        |         |         |         |         |        |
|                             | <b>\$803,994</b> | <b>\$70,500</b> | <b>\$733,494</b> |         |         |         |         |        |

**Operating Impacts**





**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**SITE 9 IMPROVEMENTS**

**Project No: U0121**

**Submitting Department:** Utility Services **Project Status:** Active  
**Project Manager:** Jeremy Lustig **Projected Start Date:** 01/01/2016  
**Total Projected Cost:** \$637,677 **Projected Completion Date:** 06/30/2017  
**Prior Years ActualCosts:**

**Project Description:**

Remove all existing infrastructure associated with Pump Station 9 (including: fencing, landscape, building, electrical, and mechanical). The existing PRV inside the station provides emergency back-up to the 2370 Zone. A new PRV vault will need to be constructed within the ROW to continue to provide the same emergency back-up after abandonment of the station. Install communication and power lines from P-8A to R-9.

| <b>Funding Sources</b>      | <b>Total</b>     | <b>2016/17</b>   | <b>2017/18</b> | <b>2018/19</b> | <b>2019/20</b> | <b>2020/21</b> | <b>2021/22</b> | <b>Future</b> |
|-----------------------------|------------------|------------------|----------------|----------------|----------------|----------------|----------------|---------------|
| Water - Rehab & Replacement | \$637,677        | \$637,677        |                |                |                |                |                |               |
|                             | <b>\$637,677</b> | <b>\$637,677</b> |                |                |                |                |                |               |

**Operating Impacts**

|                   |                 |  |                |                 |                 |                 |                 |                 |
|-------------------|-----------------|--|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Operations Labor  | \$18,844        |  | \$797          | \$2,030         | \$2,090         | \$2,153         | \$2,218         | \$9,556         |
| Maintenance Labor | \$43,972        |  | \$1,860        | \$4,736         | \$4,878         | \$5,024         | \$5,175         | \$22,299        |
| Supplies          | \$5,806         |  | \$266          | \$657           | \$667           | \$677           | \$687           | \$2,852         |
| Utilities         | \$17,416        |  | \$797          | \$1,971         | \$2,000         | \$2,030         | \$2,061         | \$8,557         |
| Small Capital     | \$5,806         |  | \$266          | \$657           | \$667           | \$677           | \$687           | \$2,852         |
|                   | <b>\$91,844</b> |  | <b>\$3,986</b> | <b>\$10,051</b> | <b>\$10,302</b> | <b>\$10,561</b> | <b>\$10,828</b> | <b>\$46,116</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**P-21S & P-22 SURGE IMPROVEMENTS**

**Project No: U0122**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Jeremy Lustig    | <b>Projected Start Date</b>       | 07/01/2016 |
| <b>Total Projected Cost:</b>    | \$3,778,385      | <b>Projected Completion Date:</b> | 10/31/2018 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Perform a surge analysis and associated surge improvements for both pumping stations P-21S and P-22.

| Funding Sources             | Total              | 2016/17          | 2017/18            | 2018/19          | 2019/20 | 2020/21 | 2021/22 | Future |
|-----------------------------|--------------------|------------------|--------------------|------------------|---------|---------|---------|--------|
| Water - Rehab & Replacement | \$3,778,385        | \$250,000        | \$3,256,971        | \$271,414        |         |         |         |        |
|                             | <b>\$3,778,385</b> | <b>\$250,000</b> | <b>\$3,256,971</b> | <b>\$271,414</b> |         |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**WTP FLUORIDE FEED REHABILITATION**

**Project No: U0123**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>         | Jeremy Lustig    | <b>Projected Start Date</b>       | 01/01/2016 |
| <b>Total Projected Cost:</b>    | \$270,094        | <b>Projected Completion Date:</b> | 06/30/2017 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Replace existing fluoride metering pumps and associated feed piping. Evaluate the need for hydrofluorosilicic acid storage tank replacement.

| Funding Sources             | Total            | 2016/17          | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|-----------------------------|------------------|------------------|---------|---------|---------|---------|---------|--------|
| Water - Rehab & Replacement | \$270,094        | \$270,094        |         |         |         |         |         |        |
|                             | <b>\$270,094</b> | <b>\$270,094</b> |         |         |         |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**WTP PARTICLE COUNTER REPLACEMENT**

**Project No: U0124**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Jeremy Lustig    | <b>Projected Start Date</b>       | 10/01/2016 |
| <b>Total Projected Cost:</b>    | \$198,000        | <b>Projected Completion Date:</b> | 10/31/2017 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**  
 "Replace the existing particle counters with newest technology."

**Note:** Anticipated as a purchase/staff installation project."

| Funding Sources             | Total            | 2016/17          | 2017/18         | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|-----------------------------|------------------|------------------|-----------------|---------|---------|---------|---------|--------|
| Water - Rehab & Replacement | \$198,000        | \$165,000        | \$33,000        |         |         |         |         |        |
|                             | <b>\$198,000</b> | <b>\$165,000</b> | <b>\$33,000</b> |         |         |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**WTP CI2 CONTACT BASIN IMPROVEMENT**

**Project No: U0125**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>         | Jeremy Lustig    | <b>Projected Start Date</b>       | 01/01/2016 |
| <b>Total Projected Cost:</b>    | \$1,308,500      | <b>Projected Completion Date:</b> | 06/30/2017 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Modify the existing WTP clearwell by adding additional baffle walls to the existing clearwell.

| Funding Sources             | Total              | 2016/17            | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|-----------------------------|--------------------|--------------------|---------|---------|---------|---------|---------|--------|
| Water - Rehab & Replacement | \$1,308,500        | \$1,308,500        |         |         |         |         |         |        |
|                             | <b>\$1,308,500</b> | <b>\$1,308,500</b> |         |         |         |         |         |        |

**Operating Impacts**

|                   |                  |  |  |                 |                 |                 |                 |                 |
|-------------------|------------------|--|--|-----------------|-----------------|-----------------|-----------------|-----------------|
| Operations Labor  | \$36,468         |  |  | \$4,101         | \$4,224         | \$4,351         | \$4,481         | \$19,311        |
| Maintenance Labor | \$85,090         |  |  | \$9,569         | \$9,856         | \$10,152        | \$10,456        | \$45,057        |
| Supplies          | \$11,193         |  |  | \$1,327         | \$1,347         | \$1,368         | \$1,388         | \$5,763         |
| Utilities         | \$33,582         |  |  | \$3,982         | \$4,042         | \$4,103         | \$4,164         | \$17,291        |
| Small Capital     | \$11,193         |  |  | \$1,327         | \$1,347         | \$1,368         | \$1,388         | \$5,763         |
|                   | <b>\$177,526</b> |  |  | <b>\$20,306</b> | <b>\$20,816</b> | <b>\$21,342</b> | <b>\$21,877</b> | <b>\$93,185</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**WTP BW PUMPS & BLOWER STARTER REPLACEMENTS**

**Project No: U0126**

|                               |                  |                                   |            |
|-------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b> | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>       | Jeremy Lustig    | <b>Projected Start Date</b>       | 07/01/2018 |
| <b>Total Projected Cost:</b>  | \$105,000        | <b>Projected Completion Date:</b> | 06/30/2019 |

**Prior Years ActualCosts:**

**Project Description:**

"Install New softstarts and power factor correction capacitors to Replace Starters on: 100 HP WTP Filter Air Scour blowers 1 & 2; 100 HP WTP Filter Backwash pumps 1 & 2.

**Note: This is a purchase and staff installation project."**

| Funding Sources             | Total            | 2016/17 | 2017/18 | 2018/19          | 2019/20 | 2020/21 | 2021/22 | Future |
|-----------------------------|------------------|---------|---------|------------------|---------|---------|---------|--------|
| Water - Rehab & Replacement | \$105,000        |         |         | \$105,000        |         |         |         |        |
|                             | <b>\$105,000</b> |         |         | <b>\$105,000</b> |         |         |         |        |

**Operating Impacts**

|  |
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|  |
|  |
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**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**WRF WEST CHEMICAL BUILDING ELECTRICAL AND BUILDING REHABILITATION**

**Project No: U0127**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Clifford Clark   | <b>Projected Start Date</b>       | 10/01/2016 |
| <b>Total Projected Cost:</b>    | \$1,983,578      | <b>Projected Completion Date:</b> | 03/31/2019 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Replace Motor Control Center panels, electrical conduits, wiring, and structural improvements in the West Chemical Building of the WRF.

| Funding Sources                  | Total              | 2016/17         | 2017/18          | 2018/19            | 2019/20 | 2020/21 | 2021/22 | Future |
|----------------------------------|--------------------|-----------------|------------------|--------------------|---------|---------|---------|--------|
| Wastewater - Rehab & Replacement | \$1,983,578        | \$66,667        | \$727,859        | \$1,189,052        |         |         |         |        |
|                                  | <b>\$1,983,578</b> | <b>\$66,667</b> | <b>\$727,859</b> | <b>\$1,189,052</b> |         |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**WRF GENERATOR CONNECTIONS**

**Project No: U0128**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Clifford Clark   | <b>Projected Start Date</b>       | 07/01/2016 |
| <b>Total Projected Cost:</b>    | \$940,750        | <b>Projected Completion Date:</b> | 06/30/2018 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

Add connection points for the rapid and safe connection of emergency generators to specific power substations within the WRF.

| Funding Sources                  | Total            | 2016/17         | 2017/18          | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|----------------------------------|------------------|-----------------|------------------|---------|---------|---------|---------|--------|
| Wastewater - Rehab & Replacement | \$940,750        | \$40,000        | \$900,750        |         |         |         |         |        |
|                                  | <b>\$940,750</b> | <b>\$40,000</b> | <b>\$900,750</b> |         |         |         |         |        |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**WRF BLACK MOUNTAIN-GREEN VALLEY MOTOR STARTER REPLACEMENTS**

**Project No: U0129**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Clifford Clark   | <b>Projected Start Date</b>       | 07/01/2017 |
| <b>Total Projected Cost:</b>    | \$325,500        | <b>Projected Completion Date:</b> | 06/30/2018 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

**Purchase and replace the motor starters for the Black Mountain (BM) and Green Valley (GV) Reclaimed Pumps. Staff will install the replacement.**

| Funding Sources                  | Total            | 2016/17 | 2017/18          | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|----------------------------------|------------------|---------|------------------|---------|---------|---------|---------|--------|
| Wastewater - Rehab & Replacement | \$325,500        |         | \$325,500        |         |         |         |         |        |
|                                  | <b>\$325,500</b> |         | <b>\$325,500</b> |         |         |         |         |        |

**Operating Impacts**

|                   |                 |  |  |  |                |                |                |                 |
|-------------------|-----------------|--|--|--|----------------|----------------|----------------|-----------------|
| Operations Labor  | \$7,542         |  |  |  | \$984          | \$1,014        | \$1,044        | \$4,500         |
| Maintenance Labor | \$15,085        |  |  |  | \$1,969        | \$2,028        | \$2,088        | \$9,000         |
| Supplies          | \$13,795        |  |  |  | \$1,884        | \$1,912        | \$1,941        | \$8,058         |
| Small Capital     | \$6,898         |  |  |  | \$942          | \$956          | \$970          | \$4,030         |
|                   | <b>\$43,320</b> |  |  |  | <b>\$5,779</b> | <b>\$5,910</b> | <b>\$6,043</b> | <b>\$25,588</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**RTC-FRI VOLUNTEER/EXECUTIVE AIRPORT WATER & SEWER LINE EXTENSIONS**

**Project No: U0804**

|                               |                  |                                   |            |
|-------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b> | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>       | John Day         | <b>Projected Start Date</b>       | 01/01/2015 |
| <b>Total Projected Cost:</b>  | \$2,586,009      | <b>Projected Completion Date:</b> | 06/30/2017 |

**Prior Years ActualCosts:**

**Project Description:**

Water and sewer line extensions needed as part of RTC-FRI project

| Funding Sources                     | Total              | 2016/17            | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|-------------------------------------|--------------------|--------------------|---------|---------|---------|---------|---------|--------|
| Wastewater - Development Enterprise | \$1,034,404        | \$1,034,404        |         |         |         |         |         |        |
| Water - Development Enterprise      | \$1,551,605        | \$1,551,605        |         |         |         |         |         |        |
|                                     | <b>\$2,586,009</b> | <b>\$2,586,009</b> |         |         |         |         |         |        |

**Operating Impacts**

|                   |                  |                |                 |                 |                 |                 |
|-------------------|------------------|----------------|-----------------|-----------------|-----------------|-----------------|
| Operations Labor  | \$49,568         | \$1,794        | \$11,419        | \$11,762        | \$12,115        | \$12,478        |
| Maintenance Labor | \$115,659        | \$4,186        | \$26,645        | \$27,444        | \$28,268        | \$29,116        |
| Supplies          | \$15,719         | \$598          | \$3,696         | \$3,752         | \$3,808         | \$3,865         |
| Utilities         | \$47,158         | \$1,794        | \$11,089        | \$11,255        | \$11,424        | \$11,596        |
| Small Capital     | \$15,719         | \$598          | \$3,696         | \$3,752         | \$3,808         | \$3,865         |
|                   | <b>\$243,823</b> | <b>\$8,970</b> | <b>\$56,545</b> | <b>\$57,965</b> | <b>\$59,423</b> | <b>\$60,920</b> |



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**General Utility Services**

**RTC RACETRACK ROAD IMPROVEMENTS**

**Project No: U0810**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>         | John Day         | <b>Projected Start Date</b>       | 01/01/2016 |
| <b>Total Projected Cost:</b>    | \$50,080         | <b>Projected Completion Date:</b> | 06/30/2017 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

**This project will include rehabilitation of the pavement, provide complete streets elements, complete a road diet on Racetrack Road between Newport Drive and Sausalito Avenue, construct a road bridge over the C1 Channel at Newport Drive, construct a traffic signal at Blue Lantern, improve the Racetrack Channel, and many other neighborhood improvements on Racetrack Road from Boulder Highway to Athens Avenue.**

| Funding Sources                  | Total           | 2016/17         | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|----------------------------------|-----------------|-----------------|---------|---------|---------|---------|---------|--------|
| Water - Rehab & Replacement      | \$35,056        | \$35,056        |         |         |         |         |         |        |
| Wastewater - Rehab & Replacement | \$15,024        | \$15,024        |         |         |         |         |         |        |
|                                  | <b>\$50,080</b> | <b>\$50,080</b> |         |         |         |         |         |        |

**Operating Impacts**

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**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**WASTEWATER TREATMENT & RECLAIMED FACILITIES MASTER PLAN**

**Project No: U9054**

|                                 |                    |                                   |            |
|---------------------------------|--------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services   | <b>Project Status:</b>            | Active     |
| <b>Project Manager:</b>         | Victoria Underwood | <b>Projected Start Date</b>       | 10/01/2015 |
| <b>Total Projected Cost:</b>    | \$660,000          | <b>Projected Completion Date:</b> | 02/28/2017 |
| <b>Prior Years ActualCosts:</b> |                    |                                   |            |

**Project Description:**

Project includes the SOQ review, selection and award of professional engineering services to evaluate the City's existing and future wastewater treatment and reclamation facility needs based on changing service area, growth, land-use, influent flow composition, regulations, levels of service, and aging infrastructure. The project deliverable will be a Master Plan that will identify required improvements with estimated start dates, construction costs and implementation triggers.

| Funding Sources         | Total            | 2016/17          | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | Future |
|-------------------------|------------------|------------------|---------|---------|---------|---------|---------|--------|
| Wastewater - Operations | \$660,000        | \$660,000        |         |         |         |         |         |        |
|                         | <b>\$660,000</b> | <b>\$660,000</b> |         |         |         |         |         |        |

**Operating Impacts**

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**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**POTABLE WATER MASTER PLAN UPDATE**

**Project No: U9075**

|                                 |                  |                                   |            |
|---------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b>   | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>         | Don Pelissier    | <b>Projected Start Date</b>       | 08/01/2017 |
| <b>Total Projected Cost:</b>    | \$617,500        | <b>Projected Completion Date:</b> | 09/30/2018 |
| <b>Prior Years ActualCosts:</b> |                  |                                   |            |

**Project Description:**

City-wide Potable Water Master Plan Update. It will comprehensively assess the capacity of the existing potable water system (transmission and distribution pipelines, pump stations and reservoirs, flow control stations, and PRV's) and determine the necessary infrastructure improvements to meet future growth.

| Funding Sources    | Total            | 2016/17 | 2017/18          | 2018/19         | 2019/20 | 2020/21 | 2021/22 | Future |
|--------------------|------------------|---------|------------------|-----------------|---------|---------|---------|--------|
| Water - Operations | \$617,500        |         | \$566,042        | \$51,458        |         |         |         |        |
|                    | <b>\$617,500</b> |         | <b>\$566,042</b> | <b>\$51,458</b> |         |         |         |        |

**Operating Impacts**

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**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Wastewater Services**

**WASTEWATER COLLECTION MASTER PLAN UPDATE**

**Project No: U9076**

|                               |                  |                                   |            |
|-------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b> | Utility Services | <b>Project Status:</b>            | Proposed   |
| <b>Project Manager:</b>       | Don Pelissier    | <b>Projected Start Date</b>       | 08/01/2018 |
| <b>Total Projected Cost:</b>  | \$520,000        | <b>Projected Completion Date:</b> | 09/30/2019 |

**Prior Years ActualCosts:**

**Project Description:**

City-wide Wastewater Master Plan Update. It will comprehensively assess the capacity of the existing wastewater collection system and determine the necessary infrastructure improvements to meet future growth.

| Funding Sources         | Total            | 2016/17 | 2017/18 | 2018/19          | 2019/20         | 2020/21 | 2021/22 | Future |
|-------------------------|------------------|---------|---------|------------------|-----------------|---------|---------|--------|
| Wastewater - Operations | \$520,000        |         |         | \$476,667        | \$43,333        |         |         |        |
|                         | <b>\$520,000</b> |         |         | <b>\$476,667</b> | <b>\$43,333</b> |         |         |        |

**Operating Impacts**

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**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**Water Services**

**SERVICE LINE REPLACEMENT PROGRAM**

**Project No: U9424**

|                               |                    |                                   |            |
|-------------------------------|--------------------|-----------------------------------|------------|
| <b>Submitting Department:</b> | Utility Services   | <b>Project Status:</b>            | Annual     |
| <b>Project Manager:</b>       | Victoria Underwood | <b>Projected Start Date</b>       | 07/01/2016 |
| <b>Total Projected Cost:</b>  | \$5,000,000        | <b>Projected Completion Date:</b> | 06/30/2026 |

**Prior Years ActualCosts:**

**Project Description:**

Replace water service laterals for select neighborhoods where the lines have reached the end of useful life. The scope of work includes, excavation, removal, installation, backfill for replacement of service lines diameters 3/4" to 2" from the water main to the meter.

| Funding Sources             | Total              | 2016/17          | 2017/18          | 2018/19          | 2019/20          | 2020/21          | 2021/22          | Future             |
|-----------------------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|--------------------|
| Water - Rehab & Replacement | \$5,000,000        | \$500,000        | \$500,000        | \$500,000        | \$500,000        | \$500,000        | \$500,000        | \$2,000,000        |
|                             | <b>\$5,000,000</b> | <b>\$500,000</b> | <b>\$500,000</b> | <b>\$500,000</b> | <b>\$500,000</b> | <b>\$500,000</b> | <b>\$500,000</b> | <b>\$2,000,000</b> |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**General Utility Services**

**PAVEMENT PATCHING PROGRAM**

**Project No: U9427**

|                               |                  |                                   |            |
|-------------------------------|------------------|-----------------------------------|------------|
| <b>Submitting Department:</b> | Utility Services | <b>Project Status:</b>            | Annual     |
| <b>Project Manager:</b>       | John Day         | <b>Projected Start Date</b>       | 07/01/2016 |
| <b>Total Projected Cost:</b>  | \$8,000,000      | <b>Projected Completion Date:</b> | 06/30/2026 |

**Prior Years ActualCosts:**

**Project Description:**

Surface repairs associated with replacement of water service laterals, water and sewer main repairs, or other excavations due to corrective work on the distribution or collection system. The scope of surface restoration includes AC pavement, concrete, base materials, lane markings, valve and manhole collars.

| Funding Sources         | Total              | 2016/17          | 2017/18          | 2018/19          | 2019/20          | 2020/21          | 2021/22          | Future             |
|-------------------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|--------------------|
| Wastewater - Operations | \$800,000          | \$80,000         | \$80,000         | \$80,000         | \$80,000         | \$80,000         | \$80,000         | \$320,000          |
| Water - Operations      | \$7,200,000        | \$720,000        | \$720,000        | \$720,000        | \$720,000        | \$720,000        | \$720,000        | \$2,880,000        |
|                         | <b>\$8,000,000</b> | <b>\$800,000</b> | <b>\$800,000</b> | <b>\$800,000</b> | <b>\$800,000</b> | <b>\$800,000</b> | <b>\$800,000</b> | <b>\$3,200,000</b> |

**Operating Impacts**



**City of Henderson**  
**2016/17 - 2021/22 Capital Improvement Program**  
**Projects by Program**

**Utility Services**

**General Utility Services**

**SCADA COMPONENT REPLACEMENT PROGRAM**

**Project No: U9513**

**Submitting Department:** Utility Services **Project Status:** Annual  
**Project Manager:** Sam Vandivort **Projected Start Date:** 07/01/2016  
**Total Projected Cost:** \$1,500,000 **Projected Completion Date:** 06/30/2026  
**Prior Years ActualCosts:**

**Project Description:**  
 Annual replacement of SCADA servers and Cisco network switches

| <b>Funding Sources</b>  | <b>Total</b>       | <b>2016/17</b>   | <b>2017/18</b>   | <b>2018/19</b>   | <b>2019/20</b>   | <b>2020/21</b>   | <b>2021/22</b>   | <b>Future</b>    |
|-------------------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Water - Operations      | \$900,000          | \$90,000         | \$90,000         | \$90,000         | \$90,000         | \$90,000         | \$90,000         | \$360,000        |
| Wastewater - Operations | \$600,000          | \$60,000         | \$60,000         | \$60,000         | \$60,000         | \$60,000         | \$60,000         | \$240,000        |
|                         | <b>\$1,500,000</b> | <b>\$150,000</b> | <b>\$150,000</b> | <b>\$150,000</b> | <b>\$150,000</b> | <b>\$150,000</b> | <b>\$150,000</b> | <b>\$600,000</b> |

**Operating Impacts**

**Notes:**