RWRD’s 2019 Effluent Generation and Use Report

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Compliance and Regulatory Affairs Office
Purpose of the Report

2003 Wheeling IGA requires annual accounting for County’s effluent entitlement use:

- Recharge
- Storage
- Recovery
- Sale
- Direct Public Use
- Reclaimed Water Wheeled from Agua Nueva or Tres Rios WRFs
Purpose of the Report

Highlights key aspects of Pima County’s water resource management:

• Effluent Allocations, including SAWARSA
• Managed Recharge Facility Performance
• Constructed Recharge Facility Performance
• Reclaimed Water Use
• Conservation Effluent Pool
Three Metropolitan Reclamation Facilities:

Tres Rios -- 50 mgd (29)

Agua Nueva -- 32 mgd (23)

Randolph Park -- 3 mgd
(In temporary cessation status since 2015)
Six Sub–Regional Reclamation Facilities:

Green Valley – 4.1 mgd (1.9)
Avra Valley – 4 mgd (1.4)
Corona de Tucson – 1 mgd (0.35)
Arivaca Jct – 100K gpd (30)
P.C. Fairgrounds – 20K gpd (12)
Mt. Lemmon – 15K gpd (4.3)
2019 Total Effluent Produced

- Agua Nueva: 41%
- Tres Rios: 52%
- Others (Sub-Regional Facilities): 7%

- All Metropolitan Facilities: 57,535 AF; 93%
- Tres Rios WRF: 32,323 AF; 52%
- Agua Nueva WRF: 25,212 AF; 41%
- All Sub-Regional Facilities: 4,148 AF; 7%
Metropolitan WRF Effluent Trends

Yearly Metro Effluent Volumes

Volume in Thousands AF

- Tres Rios
- Roger Rd
- Randolph Park
- Agua Nueva

Year
Trend in Total Metropolitan Effluent
2019 Effluent Mode of Discharge

- **Groundwater**: 4%
  - 2,677 AF; 4%
  - Reclaimed, delivered to other parties (Reventon, Quail Creek)

- **Groundwater**: 3% to Others
  - 1,470 AF; 3%
  - Delivered to COT
  - Reclaimed System for use of COT/other providers
  - (includes 865 AF wheeled to Pima County)

- **City of Tucson Reclaim**: 23%
  - 14,255 AF; 23%

- **Surface Water**: 70%
  - 43,205 AF; 70%

AZPDES discharge (with or without storage credits - includes High Plains total of 595.5 AF)
## Pima County’s Metro Effluent Allocation

<table>
<thead>
<tr>
<th>Entitlement Calculations</th>
<th>Effluent Total (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Effluent</td>
<td>57,535.0</td>
</tr>
<tr>
<td>SAWRSA</td>
<td>28,200.0</td>
</tr>
<tr>
<td>Total Less SAWRSA</td>
<td>29,335.0</td>
</tr>
</tbody>
</table>

| Water Providers Share                  | 0.9                 |
| Pima County Share                      | 0.1                 |

**Entities Share 2019**

- Water Providers (90%)                  26,401.5
- Pima County (10%)                      2,933.5

- **Effluent**
  - Southern Arizona Water Rights Settlement Act (SAWRSA)
  - Conservation Effluent Pool (CEP) - not used in 2019

- **City of Tucson**
  - (and other water providers by IGA with COT)

- **Pima County**
  - Used for landscape irrigation at WRFs, parks, golf courses, environmental restoration sites, discharge, recharge credits
Use of County’s Share of Metro Effluent 2019 (2,933.5 AF)

- Reuse: 31%
- Managed Recharge: 38%
- Basin Recharge: 20%
- Lost Downstream: 9%
- On-site: 2%
- Qualified as delivery to LSCMRP: 38%
- Delivered to High Plains Constructed Recharge Project: 20%
- PC share of outflow from LSCMRP: 9%
- On-site reuse at WRFs: 2%
2013 Use of County’s Share of Metro Effluent

2019

Lost Downstream
26%

Reuse
35%

Managed Recharge
19%

Basin Recharge
20%

On-site
16%

Recharge
31%

Managed Recharge
38%

Basin Recharge
20%

Lost Downstream
9%

On-site
2%

Delivered to High Plains Constructed Recharge Project
595.5 AF; 20%

PC share of outflow from LCSMRP
260 AF; 9%

On-site reuse at WRFS
75 AF; 2%

Total = 3,237 AF

Total = 2,933.5 AF

Qualified as delivery to LCSMRP
1,104 AF; 38%
<table>
<thead>
<tr>
<th>Project</th>
<th>AF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kino Environ. Restoration Project</td>
<td>None</td>
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<tr>
<td>Lower Santa Cruz Managed Recharge</td>
<td>123.2 AF</td>
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<tr>
<td>Marana High Plains Recharge</td>
<td>2.1 AF</td>
</tr>
<tr>
<td>Rillito Riparian/Swan Wetlands</td>
<td>6.4 AF</td>
</tr>
<tr>
<td>Roger Road WRF Pond</td>
<td>13.1 AF</td>
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<tr>
<td>Santa Cruz River West Branch Bosques</td>
<td>1.3 AF</td>
</tr>
<tr>
<td>Paseo de la Iglesias</td>
<td>12.7 AF</td>
</tr>
<tr>
<td>Arroyo Chico</td>
<td>3.2 AF</td>
</tr>
<tr>
<td>Pantano</td>
<td>0.05 AF</td>
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</table>
# Pima County’s Recharge Credits

## Recharge Volumes - Calendar Year 2019 in Acre Feet

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>Delivery Volume</th>
<th>Evapo-transpiration</th>
<th>Contribution to Stream Diversions</th>
<th>Outflow</th>
<th>Cut to Aquifer</th>
<th>Recharge Credit</th>
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</thead>
<tbody>
<tr>
<td>Lower Santa Cruz Managed Recharge Project (LSCMRP)</td>
<td>1,103.54</td>
<td>123.22</td>
<td>219.00</td>
<td>260.22</td>
<td>67.16</td>
<td>694.17</td>
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<tr>
<td>Marana High Plains Effluent Recharge Project (MHPERP)</td>
<td>595.50</td>
<td>8.30</td>
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<td></td>
<td>587.1</td>
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<tr>
<td>Corona de Tucson</td>
<td>395.24</td>
<td>0.3</td>
<td></td>
<td></td>
<td></td>
<td>394.94</td>
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<tr>
<td>Avra Valley</td>
<td>1,541.75</td>
<td>34.0</td>
<td></td>
<td></td>
<td></td>
<td>1,507.75</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>3,636.03</strong></td>
<td><strong>165.82</strong></td>
<td><strong>219.00</strong></td>
<td><strong>260.22</strong></td>
<td><strong>67.16</strong></td>
<td><strong>3,184.06</strong></td>
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Under the old Pre–2019 formula:

<table>
<thead>
<tr>
<th>Cut to Aquifer</th>
<th>Recharge Credit</th>
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</thead>
<tbody>
<tr>
<td>380.66</td>
<td>380.66</td>
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</table>

Total: 2870.45
# Pima County’s Recharge Credits

<table>
<thead>
<tr>
<th>Year</th>
<th>Lower Santa Cruz Managed Recharge Project (LSCMRP) (AF)</th>
<th>Marana High Plains Effluent Recharge Project (MHPERP) (AF)</th>
<th>Corona de Tucson Underground Storage Facility (AF)</th>
<th>Avra Valley Underground Storage Facility (AF)</th>
<th>Total County Storage Credits (AF)</th>
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<tbody>
<tr>
<td>2003</td>
<td>58.10</td>
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<td></td>
<td>58.10</td>
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<tr>
<td>2004</td>
<td>449.30</td>
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<td></td>
<td></td>
<td>449.30</td>
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<tr>
<td>2005</td>
<td>535.10</td>
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<td></td>
<td>535.10</td>
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<td>2006</td>
<td>532.30</td>
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<td>532.30</td>
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<td>2007</td>
<td>604.30</td>
<td>184.08</td>
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<td>788.38</td>
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<td>2008</td>
<td>677.60</td>
<td>348.29</td>
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<td>1,025.89</td>
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<td>2009</td>
<td>367.66</td>
<td>414.01</td>
<td>195.74</td>
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<td>977.41</td>
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<td>2010</td>
<td>396.20</td>
<td>411.53</td>
<td>277.64</td>
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<td>1,085.37</td>
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<td>2011</td>
<td>321.83</td>
<td>397.23</td>
<td>271.00</td>
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<td>990.06</td>
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<td>2012</td>
<td>320.52</td>
<td>542.10</td>
<td>269.09</td>
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<td>1,131.71</td>
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<td>2013</td>
<td>181.14</td>
<td>500.30</td>
<td>281.25</td>
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<td>962.69</td>
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<td>2014</td>
<td>449.90</td>
<td>600.00</td>
<td>290.08</td>
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<td>1,339.98</td>
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<td>2015</td>
<td>542.61</td>
<td>600.00</td>
<td>284.26</td>
<td>484.02</td>
<td>1,910.89</td>
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<td>2016</td>
<td>424.47</td>
<td>600.00</td>
<td>329.85</td>
<td>1,435.08</td>
<td>2,789.40</td>
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<td>2017</td>
<td>323.54</td>
<td>600.00</td>
<td>368.15</td>
<td>1,476.62</td>
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<td>2018</td>
<td>122.11</td>
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<td>1,473.21</td>
<td>2,563.27</td>
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<td>2019</td>
<td>694.17</td>
<td>587.20</td>
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<td>1,507.75</td>
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<tr>
<td>Total</td>
<td>7,000.85</td>
<td>6,384.74</td>
<td>3,329.95</td>
<td>6,376.68</td>
<td>23,092.22</td>
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</tbody>
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Tucson AMA Effluent
Total Effluent 67,482 AF 2013

2019
Total Effluent 65,704 AF

- Recharge Credits 48%
- Reuse 29%
- Downstream Loss 13%
- ET 2%
- Balance 8%
- Net Added Long Term Credits 31,515 AF; 48%
- Direct Reuse & Annual Recovery 19,151 AF; 29%
- Left the AMA @ Trigo Rd 8,301 AF; 13%
- ET Loss from Recharge 1,467 AF; 2%
- Balance of Effluent Discharged 5,271 AF; 8%
- AMA Rd: 42%
- Direct I Annual: 15,414 AF
- Total Effluent 65,704 AF
RWRD’s 2019 Effluent Generation and Use Report

Available online at:
https://webcms.pima.gov/government/wastewaterreclamation/

Scroll down to the reports tab and select the report you want.

2016 - 2018 editions of the report also available online.