



Nap Nap Station Water Efficiency Project

Response to Socio-Economic Criteria as part of the
Off-Farm Water Efficiency Program

May 2021

Contents

Section 1: Overview	3
1.1. Project Summary	3
1.2. About Nap Nap	3
Figure 1: Nap Nap Station location	4
Section 2: Project Description	4
2.1. Project outputs at a glance	4
2.2. Project Overview	4
Section 3: Socio-Economic Criteria.....	5
3.2. Environmental and Cultural benefits	5
3.3. Water savings shared between the environment and water users.....	6
Appendix 1 – Current pipeline system	7
Appendix 2 – Proposed S&D pipeline system	8

Section 1: Overview

1.1. Project Summary

Nap Nap Station (Nap Nap) is situated approximately 15 km west of Maude and 70 km west of Hay, NSW, within the Murrumbidgee River System. The current stock and domestic (S&D) watering system delivers water from the Murrumbidgee River through an expansive earthen channel system to ground tanks and watering points.

This project consists of the installation of pumps, pipes, tanks and troughs that will enable the efficient delivery of S&D water across approximately 20,000 Ha. of grazing area. This will increase the security and efficiency of the S&D water delivery to the watering points.

These works will provide 300 ML of water at a total project cost of \$1.97 million and will deliver 130 ML of water entitlement for the environment. Nap Nap is seeking \$1.86 million in funding from the Australian Government.

1.2. About Nap Nap

Nap Nap is located on the Lower Bidgee floodplain and lies along both sides of the Murrumbidgee River. The property encompasses approximately 30 000 Ha and is a sheep, cattle and cropping enterprise that employs three full-time employees and approximately 25 casual staff and contractors.

Nap Nap has areas of environmental and cultural significance on the property and actively work with the Nari Nari peoples and environmental water holders to maintain and protect these areas.

In 2020 the history and significance of Nap Nap was detailed in the document '[Nap Nap's whispers – From Nari Nari to now](#)'.

The manager of Nap Nap sits on the Murrumbidgee Environmental Water Advisory Group (EWAG) and assists in the delivery of environmental water across several thousand hectares of Nap Nap and Lowbidgee country.

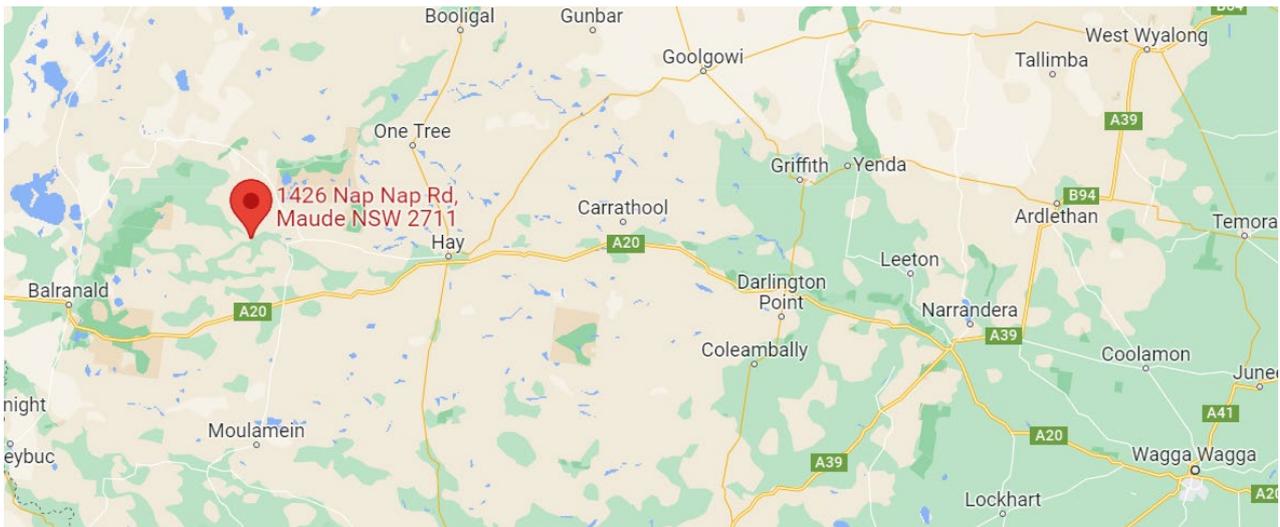
Nap Nap currently supplies approximately 20 stock watering points through 45 km of open channel. Livestock also access the channel for water. The channel traverses across a range of soil types that include areas of sandy loam types of soils where water infiltration rates are high. Parts of the channel system are also prone to erosion.

Traditionally Nap Nap receive three to four water runs per year to service livestock and domestic water requirements. Nap Nap currently utilise their irrigation pumps to service the channel network and deliver water to the ground tanks. Each S&D water run involves the pumps to operate for approximately five days and delivers approximately 25 ML per day. In good seasons, when larger stock numbers can be managed, an extra water run may be required to meet stock watering needs.

Four deliveries per year equates to approximately 500 ML per year pumped for S&D purposes. The pump and primary channel infrastructure currently deliver water to approximately 17,000 Ha of a 20,000 Ha livestock operation via 45 km of channel network (Appendix 1).

Nap Nap currently utilise a portion of irrigation entitlements to deliver S&D through the system. The proposed S&D system will enable Nap Nap to better utilise their irrigation entitlements.

Figure 1: Nap Nap Station location



Section 2: Project Description

2.1. Project outputs at a glance



Replace 45 km open channel with pipe and extend network with an additional 40 km of pipe



Install two stock and domestic pump stations



Install 31 new tanks and 37 new troughs

2.2. Project Overview

A new S&D system will deliver water to watering points across an area previously serviced by the channel system and enable the S&D system to stand alone from the irrigation system. This project will construct 85 km of pipes (Appendix 2), install two new stock and domestic pump stations and 31 new tanks and 37 new troughs.

Two pumping stations, located at two different sites on the Murrumbidgee River within the southern area of Nap Nap, will service the new system. The new system will efficiently deliver water to more grazing areas.

Nap Nap has invested in the preliminary scope phase of this project by undertaking an extensive channel assessment to identify new water points, pipeline routes and pump station sites. Mapping of the channel has also been completed to identify the distances of the existing open channel and to support the feasibility design of the new system. An independent soil analysis and cultural route assessment and inspection has also been completed.

A final design activity is required to finalise the pipe, tank and trough locations. The final pipeline route may require further cultural input if routes deviate from the draft design.

The new system will include a small electric pump and a solar pump. The option to interconnect the two pumps will be investigated, to ensure pumping activities can proceed in the event of a pump or power failure.

The project is expected to take eight months to complete – including two months for final design and six months for construction.

Section 3: Socio-Economic Criteria

3.1 Financial and Community Benefits

This project will ensure Nap Nap is more efficient in their water take and use, this will also benefit river operations and other users downstream, particularly in times of drought.

Irrigation entitlements currently being used to assist with S&D flows can be better utilised on the property. This will have a direct impact on the production opportunities and outputs for Nap Nap and increase job security for employees directly on-farm.

The project provides economic benefits to the local regional economy through local purchasing and employment opportunities and will have onflow benefits throughout the regional community.

Nap Nap will leverage established relationships with suppliers and contractors in the Hay region for procurement of services and products for civil works, including earth moving, gravel supply, concrete, formwork and wet hire of heavy machinery. This will stimulate employment opportunities and financially benefit those business and their communities. Local knowledge and the avoided costs associated with mobilisation and demobilisation are added benefits of using local contractors and suppliers.

The project will also increase the bushfire firefighting capability of the NSW Rural Fire Service (RFS) through the use of specific tank fittings that enable the RFS to access water from the tanks. The local RFS suggest that this area traditionally has limited or sparsely located water sources and the fill points will improve the bushfire fighting capability of the Brigade, and better enable them to protect the local community during bushfire events.

3.2. Environmental and Cultural benefits

Nap Nap has a significant swamp on the property near the confluence of the Murrumbidgee and Lachlan Rivers. They have worked closely with environmental water holders over the years and continue to be committed to ensuring the health of the swamp.

Nap Nap are active members of the EWAG for the Murrumbidgee and recognise the importance of ensuring environmental water is made available to sustain wetlands in the area. They play a key role in the delivery of environmental water in the Lowbidgee, including into the Gayini Nimmie-Caira ecosystem.

Environmental and cultural considerations were included in the design of the new system. Water points have been strategically located to support wildlife, including the endangered southern bell frog and rare bird species.

The project acknowledges the connection to land by First Nations People. In December 2020 and January 2021, Nap Nap worked with the Nari Nari Tribal Council to carry out a cultural heritage survey of the proposed pipeline routes, pump stations and watering points locations.

Nap Nap recognises that the area is culturally significant and actively works with Nari Nari to preserve areas of significance, such as the 'Nap Nap Burial Ground, Aboriginal Place' that was gazetted in 2012.

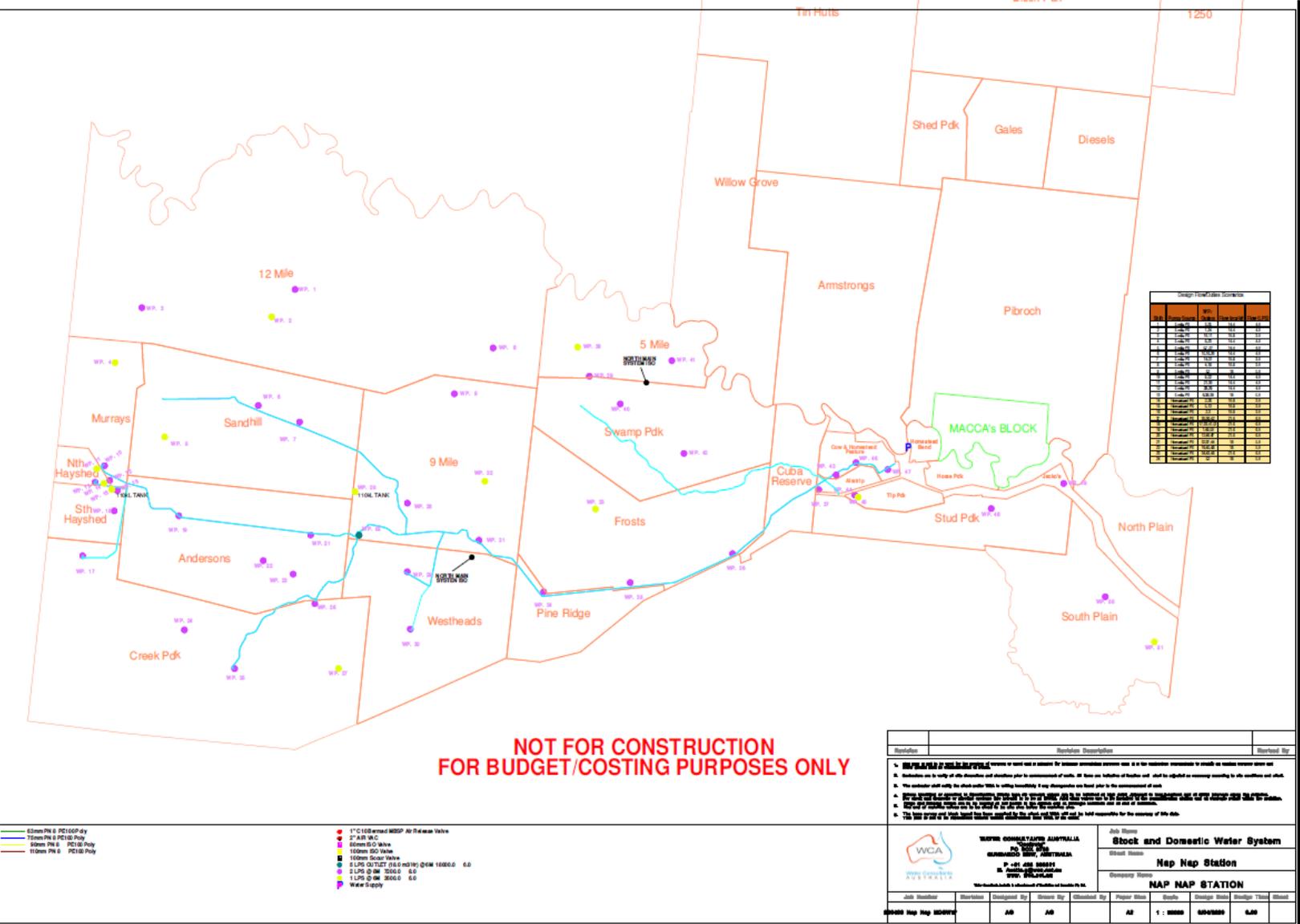
During construction, the Nari Nari Tribal Council may be engaged to explore opportunities for further involvement and ensure the project meets any cultural considerations. Nap Nap seeks to continue the very good relationship with local First Nations People during this project and beyond.

3.3. Water savings shared between the environment and water users

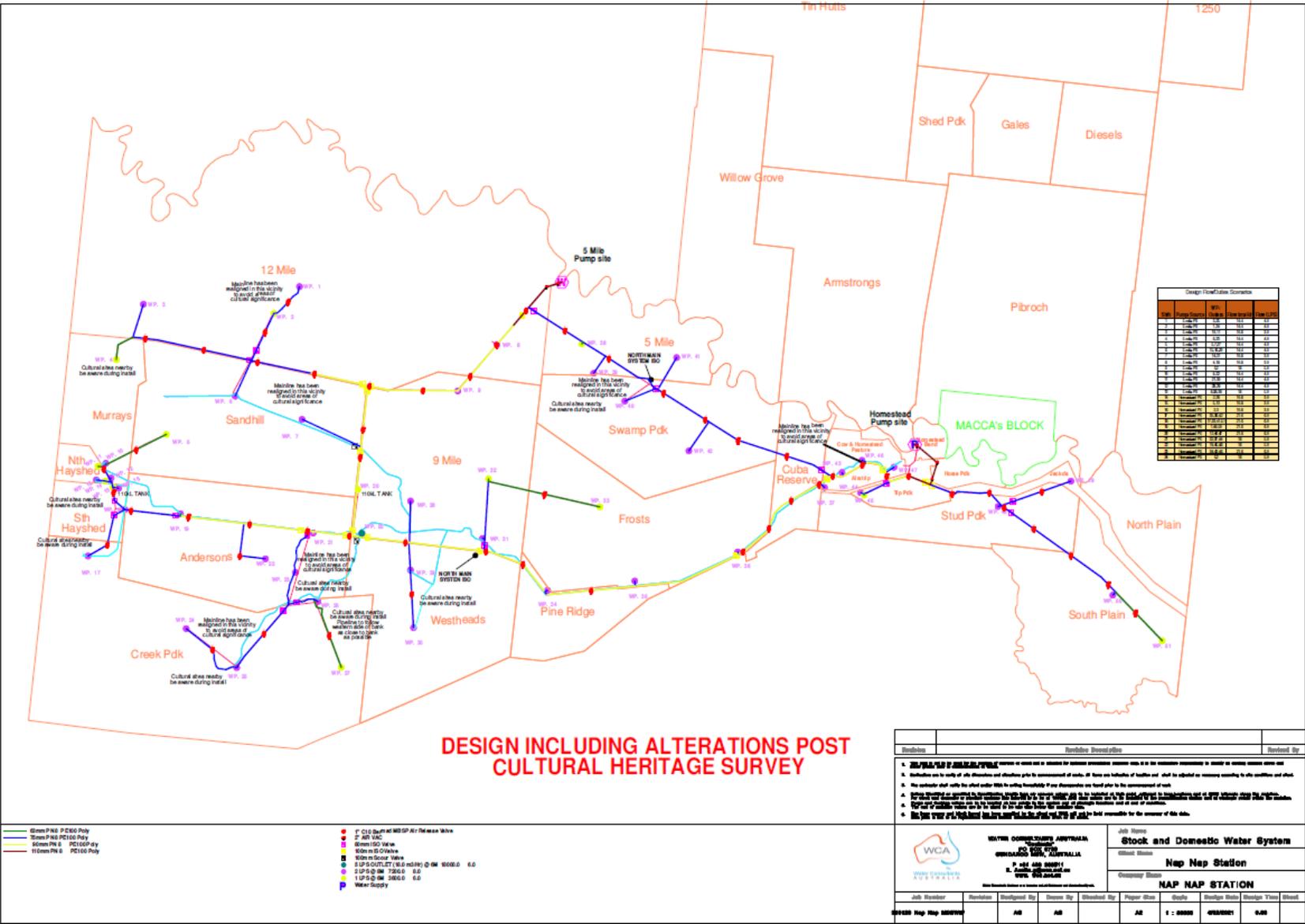
These works will provide water savings by reducing losses across the Nap Nap S&D system. The losses are a result of wetting up, evaporation, high infiltration, and blow-outs. There will be no reduction in the amount of water available for consumptive use. This ensures there are no negative impacts on current water allocation to others within the system.

These works will provide 300 ML, of which, 130 ML of S&D water entitlement will be delivered to the Commonwealth Environment Water Office (CEWO) as water for the environment.

Appendix 1 – Current pipeline system



Appendix 2 – Proposed S&D pipeline system



DESIGN INCLUDING ALTERATIONS POST CULTURAL HERITAGE SURVEY

Design Installation Summary

LINE	Prop. Length	AS	MS	MS	MS	MS
1	12.0	1.0	1.0	1.0	1.0	1.0
2	12.0	1.0	1.0	1.0	1.0	1.0
3	12.0	1.0	1.0	1.0	1.0	1.0
4	12.0	1.0	1.0	1.0	1.0	1.0
5	12.0	1.0	1.0	1.0	1.0	1.0
6	12.0	1.0	1.0	1.0	1.0	1.0
7	12.0	1.0	1.0	1.0	1.0	1.0
8	12.0	1.0	1.0	1.0	1.0	1.0
9	12.0	1.0	1.0	1.0	1.0	1.0
10	12.0	1.0	1.0	1.0	1.0	1.0
11	12.0	1.0	1.0	1.0	1.0	1.0
12	12.0	1.0	1.0	1.0	1.0	1.0
13	12.0	1.0	1.0	1.0	1.0	1.0
14	12.0	1.0	1.0	1.0	1.0	1.0
15	12.0	1.0	1.0	1.0	1.0	1.0
16	12.0	1.0	1.0	1.0	1.0	1.0
17	12.0	1.0	1.0	1.0	1.0	1.0
18	12.0	1.0	1.0	1.0	1.0	1.0
19	12.0	1.0	1.0	1.0	1.0	1.0
20	12.0	1.0	1.0	1.0	1.0	1.0
21	12.0	1.0	1.0	1.0	1.0	1.0
22	12.0	1.0	1.0	1.0	1.0	1.0
23	12.0	1.0	1.0	1.0	1.0	1.0
24	12.0	1.0	1.0	1.0	1.0	1.0
25	12.0	1.0	1.0	1.0	1.0	1.0
26	12.0	1.0	1.0	1.0	1.0	1.0
27	12.0	1.0	1.0	1.0	1.0	1.0
28	12.0	1.0	1.0	1.0	1.0	1.0
29	12.0	1.0	1.0	1.0	1.0	1.0
30	12.0	1.0	1.0	1.0	1.0	1.0
31	12.0	1.0	1.0	1.0	1.0	1.0
32	12.0	1.0	1.0	1.0	1.0	1.0
33	12.0	1.0	1.0	1.0	1.0	1.0
34	12.0	1.0	1.0	1.0	1.0	1.0
35	12.0	1.0	1.0	1.0	1.0	1.0
36	12.0	1.0	1.0	1.0	1.0	1.0
37	12.0	1.0	1.0	1.0	1.0	1.0
38	12.0	1.0	1.0	1.0	1.0	1.0
39	12.0	1.0	1.0	1.0	1.0	1.0
40	12.0	1.0	1.0	1.0	1.0	1.0
41	12.0	1.0	1.0	1.0	1.0	1.0
42	12.0	1.0	1.0	1.0	1.0	1.0
43	12.0	1.0	1.0	1.0	1.0	1.0
44	12.0	1.0	1.0	1.0	1.0	1.0
45	12.0	1.0	1.0	1.0	1.0	1.0
46	12.0	1.0	1.0	1.0	1.0	1.0
47	12.0	1.0	1.0	1.0	1.0	1.0
48	12.0	1.0	1.0	1.0	1.0	1.0
49	12.0	1.0	1.0	1.0	1.0	1.0
50	12.0	1.0	1.0	1.0	1.0	1.0
51	12.0	1.0	1.0	1.0	1.0	1.0
52	12.0	1.0	1.0	1.0	1.0	1.0
53	12.0	1.0	1.0	1.0	1.0	1.0
54	12.0	1.0	1.0	1.0	1.0	1.0
55	12.0	1.0	1.0	1.0	1.0	1.0
56	12.0	1.0	1.0	1.0	1.0	1.0
57	12.0	1.0	1.0	1.0	1.0	1.0
58	12.0	1.0	1.0	1.0	1.0	1.0
59	12.0	1.0	1.0	1.0	1.0	1.0
60	12.0	1.0	1.0	1.0	1.0	1.0
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63	12.0	1.0	1.0	1.0	1.0	1.0
64	12.0	1.0	1.0	1.0	1.0	1.0
65	12.0	1.0	1.0	1.0	1.0	1.0
66	12.0	1.0	1.0	1.0	1.0	1.0
67	12.0	1.0	1.0	1.0	1.0	1.0
68	12.0	1.0	1.0	1.0	1.0	1.0
69	12.0	1.0	1.0	1.0	1.0	1.0
70	12.0	1.0	1.0	1.0	1.0	1.0
71	12.0	1.0	1.0	1.0	1.0	1.0
72	12.0	1.0	1.0	1.0	1.0	1.0
73	12.0	1.0	1.0	1.0	1.0	1.0
74	12.0	1.0	1.0	1.0	1.0	1.0
75	12.0	1.0	1.0	1.0	1.0	1.0
76	12.0	1.0	1.0	1.0	1.0	1.0
77	12.0	1.0	1.0	1.0	1.0	1.0
78	12.0	1.0	1.0	1.0	1.0	1.0
79	12.0	1.0	1.0	1.0	1.0	1.0
80	12.0	1.0	1.0	1.0	1.0	1.0
81	12.0	1.0	1.0	1.0	1.0	1.0
82	12.0	1.0	1.0	1.0	1.0	1.0
83	12.0	1.0	1.0	1.0	1.0	1.0
84	12.0	1.0	1.0	1.0	1.0	1.0
85	12.0	1.0	1.0	1.0	1.0	1.0
86	12.0	1.0	1.0	1.0	1.0	1.0
87	12.0	1.0	1.0	1.0	1.0	1.0
88	12.0	1.0	1.0	1.0	1.0	1.0
89	12.0	1.0	1.0	1.0	1.0	1.0
90	12.0	1.0	1.0	1.0	1.0	1.0
91	12.0	1.0	1.0	1.0	1.0	1.0
92	12.0	1.0	1.0	1.0	1.0	1.0
93	12.0	1.0	1.0	1.0	1.0	1.0
94	12.0	1.0	1.0	1.0	1.0	1.0
95	12.0	1.0	1.0	1.0	1.0	1.0
96	12.0	1.0	1.0	1.0	1.0	1.0
97	12.0	1.0	1.0	1.0	1.0	1.0
98	12.0	1.0	1.0	1.0	1.0	1.0
99	12.0	1.0	1.0	1.0	1.0	1.0
100	12.0	1.0	1.0	1.0	1.0	1.0

Revisions	Revised By
<ol style="list-style-type: none"> 1. REVISIONS - All revisions must be approved by the project manager before implementation. 2. REVISIONS - All revisions must be approved by the project manager before implementation. 3. REVISIONS - All revisions must be approved by the project manager before implementation. 4. REVISIONS - All revisions must be approved by the project manager before implementation. 5. REVISIONS - All revisions must be approved by the project manager before implementation. 	
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