

## **BOARD OF DIRECTORS SPECIAL MEETING**

Tuesday, March 7th, 2024 – 9:00A.M.

### **AGENDA**

- 1. Strategic planning:
  - a. Enclosed Conduit System plan update.
  - b. Capital plan update.
  - c. Pump station replacement plan update.
  - d. \*Prioritization and sequencing.

# Item- a

			Inflatio	on Rate	2024 - 2025>	5%							
Proposed completion year	Lateral	Acres	Estimated Length (miles)	Materials Cost*	Equpment Costs (\$)*	Pump Station Upgrade Costs (\$)*	Rental Equipment Costs	Blasting/ Boring/ Misc Costs	Gravel Costs	Total Costs (\$)*	Total Costs Inflation Adjusted Costs (\$)	Cost/Acre-ft saved (\$)	Water Save (Acre- ft/season
2025	P3L	786.6	12.1	1,016,000	510,000	100,000	80,000	75,000	153,239	1,934,239	1,934,239	5,574	347
2026	P13 West	468.1	2.9	1,747,601	355,054	150,000	60,000	100,000	40,000	2,452,655	2,575,288	12,470	207
2027	P13E Phase 1	339.9	3.0	2,176,255	266,269	1	30,000	100,000	20,000	2,592,524	2,858,258	19,061	150
2028	P13E Phase 2	275.4	1.6	1,671,787	203,633		30,000	100,000	20,000	2,025,420	2,344,677	19,298	122
2029	P13E Phase 3	374.1	2.1	1,735,103	213,522		50,000		20,000	2,018,625	2,453,651	14,867	165
2030	P13E Phase 4	1,342.4	5.5	2,136,401	382,021		50,000		40,000	2,608,421	3,329,080	5,621	592
2031	P3H phase1	379.9	3.0	1,300,062	369,552	100,000	30,000		57,923	1,857,537	2,489,278	14,852	168
2032	P3H phase2	379.9	3.0	1,300,062	369,552		30,000		57,923	1,757,537	2,473,032	14,755	168
2033	P3H phase3	379.9	3.0	1,300,062	369,552				57,923	1,727,537	2,552,359	15,229	168
2034	P3H phase4	379.9	3.0	1,300,062	369,552		30,000		57,923	1,757,537	2,726,517	16,268	168
2035	P2HL	375.1	5.4	570,559	246,427	100,000	60,000		96,446	1,073,432	1,748,508	10,566	165
2036	P2HR - Phase 1	447.1	5.7	1,212,011	320,988		30,000		85,000	1,647,999	2,818,638	14,290	197
2037	P2HR - Phase 2	447.1	5.7	1,212,011	320,988				85,000	1,617,999	2,905,694	14,731	197
2038	P2HR - Phase 3	447.1	5.7	1,212,011	320,988		30,000		85,000	1,647,999	3,107,548	15,754	197
2039	P2LR - Phase 1	287.9	3.8	806,667	220,000	100,000	30,000		57,216	1,213,882	2,403,404	18,922	127
2040	P2LR - Phase 2	287.9	3.8	806,667	220,000		30,000		57,216	1,113,882	2,315,681	18,232	127
2041	P2LR - Phase 3	287.9	3.8	806,667	220,000		30,000		57,216	1,113,882	2,431,465	19,143	127
2042	P2LL	348.7	6.3	644,000	270,000		50,000		80,000	1,044,000	2,392,867	15,554	154
2043	P1H - phase 1	395.5	3.8	650,000	171,500	100,000	30,000	100,000	76,832	1,128,332	2,715,466	15,563	174
2044	P1H - phase 2	395.5	3.8	650,000	171,500	100,000	30,000	100,000	76,832	1,128,332	2,851,240	16,341	174
2045	P1L - phase 1	304.0	4.6	584,000	170,000	100,000	30,000	100,000	50,000	1,034,000	2,743,510	20,456	134
2046	P1L - phase 2	304.0	4.6	584,000	170,000		30,000	100,000	50,000	934,000	2,602,089	19,402	134
2047	P1L - phase 3	304.0	4.6	584,000	170,000		30,000	100,000	50,000	934,000	2,732,194	20,372	134
Totals		9,738	101	26,005,987	6,401,098	850,000	800,000		1,431,689	36,363,774	59,504,681		4,296
						Average Yea	arly Cost			1,581,034	2,587,160		

Does not include extra costs for likely required piping in paved road rights-of-way. Water Saved is based on recovering 15% lateral losses to deliver 2.5 acre-ft/acre.

Notes:

# Item-b



To:

**Board of Directors** 

From:

Scott Revell, District Manager

Date:

March 7, 2024

Re:

Capital Plan, ECS Schedule and Pump Station Replacement Plan Updates

#### Attachments

1. Capital Plan dated 3/1/2024

2. Enclosed Conduit Schedule dated 2/2024

3. Pump Station Replacement plan dated 3/1/2024

### **Capital Plan Background**

The capital plan was updated in February 2021. At that time the plan envisioned the district not undertaking an ECS project in the winter of 2025-26. The off year was planned in order to free money up to fund the cumulative pump station deficit years (2023 to 2025) and to free up crew capacity to address a long list of backlogged maintenance items.

The supply chain related price spikes in 2021 caused the district to take the off-year four years earlier than originally planned (2021-22 instead of 2025-26).

The capital plan was last updated in September 2022. The plan was synchronized to the Enclosed Conduit System Plan and the Pump Station Replacement Plan. Since that time, some projects have been completed and a few priorities have changed.

- 2022 & 2023 have been deleted and 2027 & 2028 have been added in their place.
- The Sparling meter replacement and siphon valve replacement projects have been completed and have been removed from the plan.
- There have been difficulties finding parts for motor protection relays and a different approach is needed. The costs are not yet known, but are expected to be significantly higher than the \$6,000 per unit estimated previously. Staff will be report back with a new

approach. The work may need to be spread out over more years in order to deal with the cost increases.

- There are a couple of recurring annual minor expenses that should be moved to the O&M budget as noted in the plan. \$14K for Main Canal PLC motor controllers and \$1K for water level sensor replacements are annual expenses.
- The updated plan assumes additional \$1/ac. assessment increases in 2025-2028. The prior version did not include increases beyond 2024. Staff is seeking direction from the Board as to the acceptability of this change. Each \$1/ac. increase results in just over \$1,000,000 in 14 years.

2024	\$17.94/ac x 72,517 acres = \$1,301,000
2025	\$18.94/ac x 72,517 acres = \$1,374,000
2026	\$19.94/ac x 72,517 acres = \$1,446,000
2027	\$20.94/ac x 72,517 acres = \$1,518,000
2028	\$21.94/ac x 72,517 acres = \$1,591,000

The Board could choose to not implement increases beyond 2024, or could choose to implement smaller increases (or in alternating years) or larger increases to expedite funding long overdue long-range improvements and to account for rising costs. A decision is not expected but guidance to staff would be helpful.

- The \$857,000 in combined net deficits from 2023-2025 shown in September 2022 were to be addressed as follows:
  - ✓ \$242,000 available from under spending the Pump Station line item in 2021;
  - ✓ \$264,000 available from under spending the Pump Station line item in 2022
  - ✓ \$355,000 available from under spending the Pump Station line item in 2026

  - ✓ \$900,000 expected in 2022 to available in 2025 from moving Pump 3 Low up the schedule four years (see note below on page 4 which explains that the amount available is closer to \$500,000).

There is also a combined pump station shortfall in 2027-28 of \$193,000.

• The cumulative net capital plan deficits were addressed with the knowledge and direction from the Board that the safety of dam's repairs at Kachess Dam, which total just over \$1.1M, were secondary to the capital shortages in 2023-2025. It was expected that the dam repairs would absorb any residual savings listed above and would require

funds from reserves unless the dam repair expenses were incorporated in the annual assessment in some manner.

Roza's obligation for the dam repairs is \$1,117,598 million on the following schedule:

September 1, 2023, \$368,807 (paid in 2023) September 1, 2024 \$603,503 September 1, 2025, \$73,761 September 1, 2026 \$39,116 September 1, 2027 \$32,411

- An agreement with BPA & USBR concerning power pole replacements in Moxee is pending but is not imminent as of mid-January according to USBR staff. We have been advised that there will likely be 9-to-18-month advance notice before payment is due.
- The capital plan was revised in late 2022 when the 2023 budget was being crafted to base the capital charge on 72,517 acres. Prior to that time, the plan was based on 72,000 acres. The difference is about \$9,000.
- The Capital Plan had been used to fund most of the winter work program from 2017 to 2021. The Capital Plan has been directed more and more to pump replacement going forward.

The winter work program expenses vary a great deal and have been as high as several hundred thousand dollars. A good average range is \$250,000 to \$500,000.

• Drain work could easily absorb \$75,000 to \$150,000 per year in contracted work for several years.

#### **Enclosed Conduit System (ECS) Plan Background**

- The Board approved a \$13/ac assessment increase beginning 2015 to expedite the remaining piping work. At that time, the remining projects were expected to be completed in fourteen years for a total cost of \$34.8M to conserve 9,139-acre feet annually (\$3,800/AF). Implementation of the plan was to be achieved with an average budget of \$2.4M each year, with some years exceeding that amount. \$3,800 in January 2015 = \$5,000 today.
- The initial ECS Plan was crafted in 2016 (in 2016 \$) and would have been fully implemented by 2030, although it became apparent by 2022 that updated cost projections were needed and there would need to be additional phases to stay within the average planned budget of \$2.4M/yr.

Rental equipment, temporary workers and road gravel were added to the project costs in 2018. These items have greatly increased the efficiency of the crew constructing the ECS projects and have resulting in significant progress on other backlogged maintenance work. The ECS projects are now being completed faster, better and with fewer people which allows for workers to be assigned to other maintence work more often.

 No ECS project occurred in 2021-22 due to materials price spikes which were the result of unusual supply chain disruptions. Deferring the Pump 14-Phase 1 project for one year freed up \$595,000.

#### 2022 ECS Plan Update

- The plan was updated again in September 2022. Several projects were broken into multiple phases due to cost increases to stay within the then-budgeted amount of \$2.4M budget annually, and included:
  - ✓ An inflation factor of 10% was added for the projects in 2024 & 25 & 6% was added for the projects in 2026-the end in 2037;
  - ✓ The Pump 3 projects were moved up the schedule by one year to free up money for other projects because it has a lower overall cost.
  - ✓ Pump 14 Low was broken into two phases, with the Pump 14 Low projects being incorporated into the Pump 13 East project to avoid building a Pump 14 pump station (\$5M).
  - √ 1 phase was added.
  - ✓ The water conservation savings were updated to better match observed operational spill reductions.
  - ✓ Full implementation by 2037 at a total inflation adjusted cost of \$52.5M to conserve 5,673 AF by piping the remaining open laterals which equates to \$9,254/AF

#### 2024 ECS Plan Update

- Additional ECS phases are proposed due to cost increases and crew capacity limitations as follows:
  - ✓ Pump 13 West will need to occur as a separate phase;
  - ✓ Pump 13 East will need to occur in four phases due to cost increases to stay within the \$2.5M budget.
  - ✓ Both Pump 14 Low phases have been eliminated and have been incorporated into Pump 13 East.
  - ✓ Move the Pump 3 High projects back down the list below the Pump 13 projects because there are no financial advantages to enclosing Pump 3 High earlier.
  - ✓ Assumes a 5% inflation rate.
  - ✓ Summarized as follows:

Pump Lateral	Phases	Cost	AF	\$/AF	Notes
3 Low	1	\$1.934M	347	\$ 5,573	
13	5	\$13.56M	1,235	\$10,980	4 additional phases due to cost increases
3 High	4	\$10.24M	672	\$15,239	2 additional phases due to cost increases
2	8	\$20.12M	1,291	\$15,585	3 additional phases due to cost increases
1	5	\$13.64M	_ 750	\$18,168	3 additional phases due to cost increases
		\$59.494M	4,295	\$13,850	Adds 12 years (costs rounded slightly)

#### • Pump 3 Low ECS Project:

- ✓ Pipe and fuel prices are higher than they were when the 2016 plan was created, but since then have come down somewhat from their earlier peaks;
- ✓ \$100,000 more in the Pressure Project line-item budget beginning in 2024;
- ✓ A \$500,000 grant of re-programmed federal COVID-19 relief funds was approved though Yakima County towards the Pump 3 Low ECS project in March of 2023. A contract with Yakima County has not been executed.

The Pump 3 Low project is comparatively small and was moved up in the 2022 plan from 2025-26 to 2024-25 in order to free up what was initially expected to be up to \$900,000 which could be applied to the deficits in 2023, 2024 and 2025. Sharply rising materials costs will absorb some of those savings by the time the project is complete. Current estimates are that Pump 3 Low ECS project will be roughly \$2,000,000 which is \$500,000 less than the budgeted amount.

The Yakima County grant allows the District to direct an equivalent amount to the remaining 2023-2025 pump station deficit and/or the safety of dam's repairs (or elsewhere).

#### • Pump 13 ECS Projects:

The project is being broken in to five total phases for financial reasons to fit within the \$2.5M budget allocation as follows:

- ✓ Pump 13 West
- ✓ Pump 13 East-phase 1
- ✓ Pump 13 East-phase 2
- ✓ Pump 13 East-phase 3
- ✓ Pump 13 East-phase 4

Pump 14 Low (phases 1 & 2) will be incorporated into Pump 13. Doing so eliminates the need to construct a new Pump 14 pump station and will save \$5 million.

Staff is also examining a USBR water efficiency grant of up to \$5M for Pump 13 East. The program being examined does not require the district to give up any conserved water. A \$5M grant would allow for four phases to be contracted into two phases, which would cut two years off of the plan implementation schedule. If sufficient grant funds are available, the Roza crew could construct the Pump 13 East project over two winters.

Each phase that is added or eliminated affects the date at which the pump station replacement plan can be fully funded.

• The Board added \$100,000 per year to the pressure projects line item in the budget in 2024 to begin to address the increased prices for a total of \$2.5M annually.

The District could plan additional small increases similar to what as has been done with the capital plan.

- The plan has been revised with an eye to either pausing the ECS program for at least a few years at some point to redirect funds to higher priority conservation projects which achieve higher water savings at lower overall costs per acre foot.
- Additional planning and preliminary design have occurred for expanding Wasteway 6 reregulation reservoir due to the effects of enclosing the Pump 13 and 14 laterals which will exacerbate the need for the reservoir expansion.

#### **Pump Station Replacement Plan Background**

The plan was crafted in 2021 and included a total of \$60M from 2021 to 2045 and included a 3% inflation factor over that period. Pumps 16 and 14 were prioritized as the first two projects to undertake because Pump 16 was deemed to be the most at risk of failure and Pump 14 was being timed to integrate with the Pump 14 lateral canal enclosures and the addition of part of Pump 14 Low lateral into Pump 13 East.

Each pump station would be upgraded over three years following this plan:

- √ Year 1-Design
- √ Year 2-Purchase materials
- √ Year 3-Construction

The plan was revised in December 2022. Significantly rising costs have caused the need to update the plan again, and to again synchronize it with the ECS plan, which is also changing.

Staff have prioritized the replacement list based on:

- ✓ Condition of the units
- ✓ Availability of spare units
- ✓ Available operational cushion (e.g. are all units already running all of the time)
- ✓ Reliability and relative importance to the affected growers (assessed acres/crop mix/etc.)

The pump station replacement plan relies heavily on directing nearly all capital funds to it from 2026 forward and, on ECS funds transitioning to implement the pump station replacement plan in 2048 after the last ECS project is completed in the spring of 2047.

Design for the first pump stations has been more complex and slower than was anticipated in 2022.

Current estimates are \$223M to implement the plan over 49 years with completion in 2073. These costs and timelines assume 5% inflation and \$2.5M in ECS funds being directed to pump station replacement beginning in 2048 when the ECS program is completed (under the existing schedule).

## **Water Conservation Cost Comparison**

Project	Cost	AF conserved	\$/AF	Notes
2024-2047 ECS plan	\$ 59.5M	4,296	\$13,851	Per 2024 plan update. w/ 5% inflation
	\$16.5M	2,000 (re-reg)	\$8,250	550 AF expansion to 700 AF to allow for Main Canal piping lower 10 miles
WW6 Re-reg expansion & Main Canal piping				
	\$18.3M*	4,100 (piping)	\$4,463	*Materials/equipment/fuel only & assumes Roza crews install the pipe
				10.1 miles in Moxee from MP 17.1 to MP 27.5 @ 1,450 AF/mile
Main Canal concrete liner replacement	\$48M	12,645	\$3,796	Savings are less 2,000 AF pump back water already being recovered
				There are some areas where the side panels will still need to be replaced and are <u>not</u> included in the cost estimate).
				10.1 miles in Moxee from MP 17.1 to MP 27.5 @ 1,450 AF/mile
Main Canal concrete liner floor only	\$23.7M	12,645	\$1,875	Savings listed are less 2,000 AF of pump back water already being recovered.
				6.2 miles in Moxee
Main Canal Floor only in highest priority 6.2 miles	\$14.5M	6,990	\$2,074	Savings listed are less 2,000 AF of pump back water already being recovered

#### **Overall Plan Forward**

- ✓ Plan to pause the ECS program at some point in the next five years to redirect funds to other conservation projects;
- ✓ Plan to implement WW6 re-reg reservoir expansion and Main Canal piping before the Main Canal liner repairs;
- ✓ Plan to replace the floor only in the Main Canal in Moxee;
  - All 10.1 miles or the highest priority 6.2 miles?
  - How many phases?
- ✓ Pursue USBR funding for Pump 13 East project to compress phases;
- ✓ UGID may affect these steps further but can be added in

### Variables which could affect implementing the steps above

- ✓ Pending IRA funding application;
- ✓ Viability of UGID (Costs and ability to move conserved water);
- ✓ USBR grant for Pump 13 East ECS;
- ✓ Availability of state capital funds for WW6 re-reg reservoir expansion/Main Canal piping
   & Main Canal floor replacement.

#### **Outstanding Issues**

- ✓ Continue with Pump Station Replacement Plan after Pump 16 in the current manner or redirect some money to water conservation?
- ✓ Would the Board like to see a switchgear-only upgrade plan as an alternative? The priorities may change somewhat.
- ✓ Funding the annual winter work plan...from the O&M budget? From the capital plan? Some of both?
  - Some year the constraints are crew time, while other years the constraints are due to money or weather.

### 2024-2028 Capital Improvement Plan

<u>Item</u>	2024 +\$1/ac	2025 +\$1/ac	2026 +\$1/ac	2027 +\$1/ac	2028 +\$1/ac	Notes
Pump stations	\$746K (-\$186K)	\$1.002M (-\$581K)	\$928K	\$331K [\$1.160M]	\$1.591M (\$1.38)	The net shortfall from 2022-26 is \$857K combined.  The net shortfall in 2027-28 is \$220K.
Pump station & canal automation upgrades	\$73K	\$ 53K	\$41K	\$27K** TBD	\$0** TBD	See page 2 for table detailing the projects.
Power pole replacement	\$470K	\$330K	N/A	N/A	N/A	\$1.2M +/- which is planned to occur by USBR in 2024.
Total Roza capital \$	\$1.301M*	\$1.385M*	\$1.446M	\$1.518M	\$1.591M	*Totals Include \$12K/yr. through 2025 from the drought fund for emergency float replacements.

- ✓ Items in green are underfunded by the amounts in ( ). Items in blue are surpluses [ ] 2022: \$657K in plan which was a surplus of \$264K 2023: \$730K in plan which was a deficit of \$858K
- ✓ See the 2/6/24 staff report to the Board of Directors for more background
- ✓ Costs are estimates prepared by the Engineering staff and will vary somewhat. Some funds are spent the following year on projects or in one winter in parts of two years.
- ✓ The last few remaining Sparling meters are located on open pump laterals scheduled for piping or along Main Canal pipeline schedule to be relocated.

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√ 2024 $17.94/ac x 72,517 acres
2025 $18.94/ac x 72,517 acres = $1,373,000
2026 $19.94/ac x 72,517 acres = $1,446,000
2027 $20.94/ac x 72,517 acres = $1,518,000
2028 $21.94/ac x 72,517 acres = $1,591,000
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\*\*PLC motor controllers are moving to O&M budget. Costs TBD for motor protection relays.

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## Pump Station and Canal Automation Upgrades Costs estimates have been updated in 2024

Item	2024	2025	2026	2027	2028	Description
Emergency Floats	\$12K	\$12K	Done			\$4K each (very rough est.) Three in 2025 will complete the upgrade at all 18 pump plants. Funded from the drought fund.
Station service fuses	\$27K	\$27K	\$27K	\$27K	Done	2021- 3 completed (15 remained) 2023- 3 completed (12 remain) \$9K each. Was deferred in 2022 & '23
Motor protection relays	\$0	TBD	TBD	TBD	TBD	\$6K each (very rough est.) budgeted initially. Three in 2025 would complete the upgrades at all 18 pump plants. 2022 & 2023 allocations were unused (\$36K total) because no suitable replacement has been found. A new approach is needed because replacement parts are not available and costs o not yet known.
Main Canal						*Move to O&M budget. Replace 2 per yr. @ \$14K/yr in 2025
PLC & motor controllers	\$0	*	*	*	*	\$7,000 each. Will continue beyond 2028 as the MC technology ages
Vac. pumps	\$14K	\$14K	\$14K	Done		
						Main Canal 29 stilling wells to do total. \$4K/each
Stilling Wells	\$20K	Done				\$1K will need to be added to the O&M budget annually to replace water level sensors starting in 2025
Yearly Total	\$73K	\$53K	\$41K	\$27K	\$0	Matches to line 2 of capital plan in orange

# Item- c

		iiiiatioii iate –	J70								1-Mar-24	
Pump Station	Number of Pumps	Alternative 2 RH2 (2020 \$)	Engineering Design	Construction Management	Contingency	Tax	Total Cost Roza	Materials Costs	Construction Costs	Year	Yearly Costs	Yearly Costs Adjusted For Inflation
16	5	4,008,000	200,400	400,800	400,800	383,566	5,393,566	3,236,139	1,957,026	2024	3,436,539	3,436,539
15	6	5,127,258	512,726	512,726	512,726	490,679	7,156,114	4,293,669	2,349,720	2025	1,957,026	2,054,878
17	2	1,676,977	167,698	167,698	167,698	160,487	2,340,557	1,404,334	768,525	2026	512,726	565,280
9A	3	3,832,974	383,297	383,297	383,297	366,816	5,349,682	3,209,809	1,756,575	2027	4,293,669	4,970,458
P14	3	2,787,782	278,778	278,778	278,778	266,791	3,890,907	2,334,544	1,277,585	2027	2,517,418	3,373,580
9	3	2,550,144	255,014	255,014	255,014	244,049	3,559,235	2,135,541	1,168,680	2027	1,787,631	2,641,146
7	3	2,235,785	223,579	223,579	223,579	213,965	3,120,485	1,872,291	1,024,616	2027	4,257,112	6,604,179
8	3	2,498,455	249,845	249,845	249,845	239,102	3,487,093	2,092,256	1,144,992	2027	4,346,134	7,805,032
3	5	4,125,436	412,544	412,544	412,544	394,804	5,757,872	3,454,723	1,890,605	2027	3,636,704	7,560,447
13	4	2,878,892	287,889	287,889	287,889	275,510	4,018,070	2,410,842	1,319,339	2027	3,290,816	7,919,742
2	5	3,949,508	394,951	394,951	394,951	377,968	5,512,329	3,307,397	1,809,981	2027	3,529,415	9,832,818
4	2	1,645,587	164,559	164,559	164,559	157,483	2,296,746	1,378,048	754,140	2027	4,887,604	13,263,011
10	2	1,190,261	119,026	119,026	119,026	113,908	1,661,247	996,748	545,473	2027	4,696,398	15,910,485
12	2	1,190,261	119,026	119,026	119,026	113,908	1,661,247	996,748	545,473	2027	4,791,295	20,330,239
5	1	639,065	63,907	63,907	63,907	61,159	891,943	535,166	292,871	2027	3,307,055	16,653,852
6	1	646,819	64,682	64,682	64,682	61,901	902,766	541,660	296,424	2027	1,869,914	10,037,309
1	4	5,864,266	586,427	586,427	586,427	561,210	8,184,756	4,910,853	2,687,476	2027	1,606,128	8,807,121
Severyns	1	653,821	65,382	65,382	65,382	62,571	258,717	155,230	38,105	2027	1,145,321	5,966,197
		47,501,291		4,750,129	4,750,129	4,545,874	14,046,132	39,265,999	21,627,604	2027	1,420,957	8,528,881
						some administration SS.		,,		2027	5,272,660	40,470,421
										2027	2,842,706	25,659,761
										2027	38,105	416,154
										Total	65,443,332	222,807,531