

**TRANSPORTATION POOLED FUND PROGRAM
 QUARTERLY PROGRESS REPORT
 for
 National Road Research Alliance (NRRRA)
 Phase – 1 (2016-2021)
 Phase – 2 (2021-2025)**

Lead Agency: Minnesota Department of Transportation

Transportation Pooled Fund Program Project # TPF-5(341) http://www.pooledfund.org/Details/Study/590 TPF-5(466) https://pooledfund.org/Details/Study/693		Report Period: 2022 - Quarter 4 (October 1 – December 30, 2022)
Project Title: National Road Research Alliance – NRRRA http://www.dot.state.mn.us/mnroad/nrra/index.html NRRRA quarterly reports for Phase-I and Phase-II are being combined because of existing projects in phase-I that are still ongoing and still pertain to the NRRRA efforts that are being done in phase-II. Both websites will be updated with the same quarterly report. Individual budgets are attached to this quarterly report for both efforts.		
Project Manager(s): TBD (MnDOT) Steve Cooper (FHWA)	Phone Number:	E-Mail stephen.j.cooper@dot.gov
Lead Agency Project ID: None	Other Project ID (i.e., contract #): None	Project Start Date: Phase 1 - February 22, 2016 Phase 2 – February 22, 2021
Original Project End Date: Phase 1 - September 30, 2018 Phase 2 – February 22, 2025	Current Project End Date: Phase 1 – February 22, 2021 Phase 2 – February 22, 2025	Number of Extensions: Phase 1 - NRRRA Executive Committee extended till 2021) Phase 2 - NA

Project schedule status → On schedule

Phase – 1 TPF-5(341) Overall Project Statistics:

Total Project Budget	Total Costs obligated to Date for Project	Percentage of Time and Funding Completed to Date
\$5,000,000	SPR Funds Budgeted = \$4,828,757 (97%) Invoices Paid = \$4,116,531 (85%) Funds Remaining = 171,243	Complete as of Feb 22, 2021 SPR 341 left open till all contracts are completed for Phase-I

Phase – 2 TPF-5(466) Overall Project Statistics:

Total Project Budget	Total Costs obligated to Date for Project	Percentage of Time and Funding Completed to Date
\$7,209,163	SPR Funds Budgeted = \$5,600,318 (72%) Invoices Paid = \$759,786 (11%) Funds Remaining = \$2,205,008	Time = 22/60 months (37%)

Project Description:

This pooled fund phase-II is open for new states and they can join at any time. This pooled fund will help direct and compliment the use of the MnROAD test track for local, regional and national research, tech transfer and implementation. Road owner agencies will provide input and participate in the decision making needed for future MnROAD construction and research scheduled in 2017 (Phase-I) and in 2022 (Phase-2). In Phase-I MnDOT and Missouri have funded construction in both states while Phase-2 MnDOT, Missouri, Wisconsin will fund 2022-2023 construction of test sections. MnROAD will continue to support common goals. Industry and academia will also play an important role to provide critical input on long-term future trends in research and barriers to implementation, including working with their customers and members who play a direct role in implementation.

Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):

To date ten (11) government agencies and over fifty-five (65+) industry, associations, consultants, and academic institutions have become NRRRA members to share their expertise and are learning about new tools and methods to improve and expand upon transportation systems nationally.

Membership

- Montana and Nebraska joined NRRRA in 2022.
- Many additional NRRRA associates also joined.

Phase-I Projects

- Tech Transfer - 100% of the 13/13 projects complete.
- 2017 Long Term Research – 100% of the 8/8 projects complete
- 2019 Long Term Research – 64% of the 7/11 projects complete
- 2019 Call for Innovation Research – 33% of the 2/6 projects complete
- 2020 Call for Innovation Research – 43% of the 3/7 projects complete

Phase-2 Projects

- 2021 Long Term Research – 0% of the 0/11 projects complete
- 2021 Long Term Research – three projects to be contracted in 2023
- 2023 Call for Innovation – up to 1.8 million open for new research

General

- NRRRA Technical Teams have met every monthly again this quarter which also acts as TAP meetings for each team's short and long-term research efforts.
- See the NRRRA website for details on all the teams' updated activities.
- Monthly Research pays off webinars have been completed and a plan for 2023 topics are developed.
- NRRRA budget for Phase-I and Phase-II are attached at the end of this report.
- MnROAD/NRRRA construction completed on the mainline for the 2022 construction season. 45 test sections developed to support NRRRA research efforts.
- Started the development of the 2023 Minnesota Transpiration Conference and Expo, St. Paul, Minnesota, May 15-17. NRRRA and intelligent construction tracks being developed within NRRRA teams
- NRRRA Executive Committee met Dec 21, 2022 and in summary discussed:
 - Membership – Glenn Engstrom's retirement as the chair. Team supported MnDOT to nominate a MnDOT employee to be the new chair. FHWA and the rigid team needs new representatives also. Expect to fill in 2023.
 - Financial Update given. Agencies are asked to review their obligations and payments to NRRRA. The EC also supported a 2023 call for innovation with 1.8 million of funding from the pooled fund. The NRRRA technical teams will be working on this in early 2023 which also could support the 2022 call for construction for the LVR since none of the proposals contained construction funding. Additional funds maybe able to help if approved. The EC can expect proposals in April 2023
 - Discussed the 2023 TRB NRRRA meeting taking place on Sunday.

Anticipated work next quarter:

The following is expected to be completed for next quarter.

- Final contracts for 2 of the RFP will be finalized this spring/summer 2023.
- Final contract for the Missouri reflective cracking/NCAT additive study that Missouri is funding with SPR dollars.
- Contact member states and their pooled fund dollar commitments
- Continued work on Phase-I pooled fund efforts and reporting progress in the team meetings.
- Continued work on Phase-2 pooled fund efforts and reporting progress in the team meetings.
- Finalize the 2022 NRRA construction report and initial data requests.
- 2023 Call for Innovation will be worked on by the technical teams. April needs/proposals are due.
- Continue to plan for the 2023 Minnesota Transpiration Conference and Expo in May 2023

Significant Results:

Currently this pooled fund is working well for all the members. We have shared resources and technology with each other related to intelligent construction and have discuss a number to topics in the technical teams. More formal documentation will start to be developed at the contracts are awarded and this work begins.

- NRRA is now up to 13 government members and at 80+ associate members.
- Many technology transfer and long-term research needs are completed or under contract. The progress/final products are shown on the NRRA website.
- NRRA members are asked to continue to brainstorm how as a group we can push implementation noting that NRRA has funding to help with this as needed in the form of contracts or travel.

Attachment A (Income Summary)

- Contains the NRRA income summary

Attachment B (Financial Summary)

- Contains the funding summary along with the research progress by invoices. More detail is listed under the NRRA [team member's webpages](#).

Potential Implementation:

See the NRRA team pages for implementation topics that are being developed – TAP members of each of the contracts and teams will be asked to help the development of implementation for the technology transfer team to push with its members. This is a focus area that is probably the hardest part of successful research. The technology transfer team will be focused on this topic in the upcoming months.

Attachment – A (NRRA Phase-1 Income)

NRRA Phase-1								
TPF-5(341) National Road Research Alliance - NRRA Pooled fund								
Funding income complete								
Current		2016	2017	2018	2019	2020	2021	Total
CA	Obligation	-	150,000	50,000	150,000	150,000	150,000	650,000
	Payment	-	150,000	50,000	150,000	150,000	150,000	650,000
IA	Obligation					150,000		150,000
	Payment					150,000		150,000
IL	Obligation	150,000	150,000	150,000	150,000	150,000	150,000	900,000
	Payment	150,000	150,000	150,000	150,000	150,000	150,000	900,000
MI	Obligation	150,000	150,000	150,000			300,000	750,000
	Payment	150,000	150,000	150,000			300,000	750,000
MN	Obligation	150,000	150,000	150,000	150,000	150,000		750,000
	Payment	150,000	150,000	150,000	150,000	150,000		750,000
MO	Obligation	150,000	150,000	150,000	150,000	150,000		750,000
	Payment	150,000	150,000	150,000	150,000	150,000		750,000
ND	Obligation	-	-	-	75,000	75,000		150,000
	Payment	-	-	-	75,000	75,000		150,000
WI	Obligation	150,000	150,000	150,000	150,000	150,000		750,000
	Payment	150,000	150,000	150,000	150,000	150,000		750,000
Illinois Tollway	Obligation					150,000		150,000
	Payment					150,000		150,000
Totals	Obligation	750,000	900,000	800,000	825,000	1,125,000	600,000	5,000,000
	Payment	750,000	900,000	800,000	825,000	1,125,000	600,000	5,000,000

Pooledfund.org does not show 150K Illinois Tollway contribution - \$4,850,000 shown on website

Attachment – A (NRRRA Phase-2 Income)

NRRRA Phase-2								
TPF-5(466) National Road Research Alliance - NRRRA Pooled fund								
		2021	2022	2023	2024	2025	2026	Total
CA	Obligation		150,000	150,000	150,000	150,000		600,000
	Payment		150,000					150,000
FHWA**	Obligation	488,000						488,000
	Payment	488,000						488,000
GA (Veda)	Obligation		25,000	25,000	25,000	25,000		100,000
	Payment		25,000					25,000
IA	Obligation			75,000	150,000	150,000		375,000
	Payment							-
IL	Obligation		150,000	150,000	150,000	150,000	150,000	750,000
	Payment		150,000					150,000
Illinois Tollway	Obligation			75,000	75,000			150,000
	Payment							-
MI	Obligation	150,000	150,000	150,000	150,000	150,000		750,000
	Payment	150,000	150,000					300,000
MN***	Obligation	150,000	150,000	746,163	150,000	150,000		1,346,163
	Payment	150,000	150,000	746,163	150,000	38,816		1,234,979
MO*	Obligation	550,000	150,000	150,000	150,000	150,000		1,150,000
	Payment	550,000	150,000					700,000
MS	Obligation	75,000	75,000	75,000	75,000	75,000		375,000
	Payment	75,000	75,000					150,000
MT	Obligation			75,000	75,000	75,000		225,000
	Payment							-
ND	Obligation	75,000	75,000	75,000	75,000	75,000		375,000
	Payment	75,000	75,000					150,000
NE	Obligation			75,000				75,000
	Payment							-
NY (Veta)	Obligation							-
	Payment							-
WI	Obligation	150,000	150,000	150,000				450,000
	Payment	150,000	150,000					300,000
Totals	Obligation	1,638,000	1,075,000	1,971,163	1,225,000	1,150,000	150,000	7,209,163
	Payment	1,638,000	1,075,000	746,163	150,000	38,816	-	3,647,979

MO* - Missouri added 400K to support the Missouri Reflective Cracking/Additive efforts
 FHWA** - FHWA added 300K for Carbon Cure PCC and 188K for ICT related efforts
 MnDOT*** - MnDOT added 400K for Veta efforts in December 2022 of non-SPR dollars + 196,163 past Veta Funds

Funding Summary - January 2023

Attachment – B (NRRRA Phase-1 Financial Summary and Project Invoicing)

NRRRA Phase-1 TPF-5(341) National Road Research Alliance - NRRRA Pooled fund

For 2022 - quarter 2 report - updated 7/16/2020

Funding Group	Description	Funding Totals	SPR Remaining
States (SPR)	Pooled Funds (9 agencies) - Pooled Fund + Wisconsin 150K + 150K Toll	\$ 5,000,000	Percent
	Total SPR Encumbered =	\$ 4,828,757	97%
	Paid Invoices =	\$ 4,116,531	85%
Additional State Funding (Not NRRRA SPR Dollars)	MnDOT Construction Funding for 2017 MnROAD Construction	\$ 3,132,681	
	Missouri DOT funding - roller compacted PCC constr and research	\$ 275,000	
Total Spending (SPR and Other)		\$ 8,407,681	

Spending Details SPR Dollars Budget/Spending

NRRRA Focus Areas	Effort Type	Item	Project Charge #	General Outcome / Deliverable	Vendors	Encumbered	Payments Invoiced	Payment Percent	
Marketing (M)	Labor	M1.1	TPF15341A	MNDOT Labor - (Website, Monthly Newsletter, Written Documents/Marketing)	MnDOT	155,755	155,755	100%	
				Agency travel / meals / meeting room costs (assume no more travel in 2020)					
Tech Transfer (T)	Purchase	T1.1	TPF15341	Communication (Written, Newsletter, video, Website) - MnDOT will not charge	Not Done				
				Tack Coats					
	Contract	T1.3.1	TPF15341	TPF15341	Longitudinal Joint Construction Performance	2016 State of Practice (SRF) top two topics from each team established in 2016	95,565	95,565	100%
					Design and Performance of Concrete Unbonded Overlays				
					Repair of Joint Associated Distress Pavements				
					Larger Subbase Materials - Done by Iowa State				
					Subgrade Design for New and Reconstructed				
					Surface Characteristics of Diamond Ground PCC Surfaces				
					Pavement preservation approaches for lightly surfaced roadways				
					Partial Depth Repairs of Concrete				
	E-Ticketing								
	Labor	T1.3.2	TPF15341B	TPF15341B	Tech transfer write-ups (MnDOT Labor) - Topics Below	MnDOT	16,751	16,751	100%
HMA – Asphalt Mixture Rejuvenator Synthesis									
Contract	T1.5.1	TPF15341	TPF15341	PM - NRRRA Spray on Rejuvenator Synthesis	2019 State of Practice (WSB)	92,102	92,102	100%	
				PM - Concrete Pavement Restoration (CPR) for BCOA					
				PM - Service Life Enhancement of Substrates Overlaid with Thin Overlays					
Research (R)	Purchase	R1.1	TPF15341	2017 MnROAD Construction Sensor Purchases	MnDOT PO	159,130	184,672	100%	
				2018 CCP Missouri Sensor Purchases - broken off the 60K available					
	Labor	R1.3	TPF15341C	TPF15341C	Inspection (MnDOT) - costs over the initial budget	MnDOT	100,021	100,021	100%
					MnROAD Site Staff Labor - additional 120K approved by EC Dec 2017				
	MnROAD Labor	R2.4	TPF15341D	TPF15341D	Approved \$120K extra funding for monitoring 2018	MnDOT	120,000	737,144	100%
					Approved \$200K extra funding for monitoring 2019 - 2022 adjustment 182K				
					Approved \$200K extra funding for monitoring 2020				
					Missouri Sensor Labor Costs for 2018 installs				
					PCC Sampling/Testing				
	Contract	R2.5	TPF15341	TPF15341	Additional Funding Approved (low initial estimate)	AET Consultant	41,514	61,514	100%
					HMA Performance Testing (75K original Estimate - will not use in Phase-I)				
	Contract	R1.7	TPF15341	TPF15341	Partial Depth Repairs Construction (not in construction contract)	Diamond Surfacing	40,000	78,662	100%
Additional Funding Approved									
MnDOT Agreement	R1.8	TPF15341	TPF15341	Compacted Concrete Pavement Construction	Missouri DOT Hired University				
				Diamond Grinding Construction (not in const					
Contract	R1.9	TPF15341	TPF15341	Additional Funding Approved	Not Done				
				Additional Funding Approved					

NRRA Focus Areas	Effort Type	Item	Project Charge #	General Outcome / Deliverable	Vendors	Encumbered	Payments Invoiced	Payment Percent
Research (R)	2017 Long Term Projects	R1.10	TPF15341	HMA Overlay and Rehab of Concrete and Methods of Enhancing Compaction	UNH	169,970	169,970	100%
		R1.11		Cold Central Plant Recycling	AET Consultant	99,997	99,997	100%
		R1.12		Fiber Reinforced Concrete Pavements	UMD	145,462	145,462	100%
		R1.13		Long Term Effects of Diamond Grinding - \$75	Not Done			
		R1.14		Concrete Early Opening Strength to Traffic	UofPitt	149,999	149,999	100%
		R1.15		Optimizing the Concrete Mix Components for Contractors	Iowa State	147,627	147,627	100%
		R1.16		Compacted Concrete Pavements for Local Streets - \$80K - Did do in Missouri	Not Done			
		R1.17		Recycled Aggregates in Aggregate Base and Larger Subbase Materials	Iowa State	225,000	225,000	100%
		R1.18		Maintaining Poor Pavements	SRF	28,725	28,725	100%
		R1.19		Partial Depth Repair	Braun Inertec	74,925	74,925	100%
	2019 Long Term Research	R1.21	TPF15341	HMA – Asphalt Mix Rejuvenator Test Sections (added 50K in April 2020)	UNH	148,981	67,719	45%
		R1.22		PM - Spray on Rejuvenator Test Sections	NCAT - 100k	100,000	25,719	26%
		R1.23		ICT - Levels 3-4 Intelligent Compaction Measurement Values (ICMV) for Soils Subgrade/Aggregate Subbase Compaction	Transtec Group	162,024	88,394	55%
		R1.24		ICT - Support Importing, Viewing and Analysis of Dielectric Constant Data in Veta (paid by Veta pooled fund)	Transtec Group	-	-	
		R1.25		ICT - HD and VHD Seismic Approaches for Roadway Evaluation	Park Consulting	299,886	299,886	100%
		R1.26		Geo - Mechanistic Load Restriction Decision Platform for Pavement Systems Prone to Moisture Variations	UNH	90,231	90,231	100%
		R1.27		Geo - Environmental Impacts on the Performance of Pavement Foundation	Michigan State	35,000	35,000	100%
		R1.28		Geo - Permeability of Base Aggregate and Sand		30,000	30,000	100%
		R1.29		Geo - Improve material inputs into mechanistic design properties for reclaimed HMA Roadways		30,000	30,000	100%
		R1.30		PCC - Construction Report for Jointless FRC Roundabout in Minnesota	Iowa State	49,999	49,999	100%
R1.31		PCC - Incorporate Joint Faulting Model Into BCOA-ME		Contracting Uof Pittsburg	24,999	24,999	100%	
R1.32		PCC - Engineered Dowel and Tie Bars combined with LTPP SPS-2 Determination of Causes for Cracking Over Dowel Bars		ERES Consulting	101,083	66,859	66%	

NRRA Focus Areas	Effort Type	Item	Project Charge #	General Outcome / Deliverable	Vendors	Encumbered	Payments Invoiced	Payment Percent	
Research (R)	2019 Call for Innovation	R1.33	TPF15341	Blending of Higher Strength Aggregates with Recycled Concrete and Marginal Aggregates to Improve Concrete Properties	Contracting - UofSt Thomas	32,332		0%	
		R1.34		Performance of Concrete Overlays over Full Depth Reclamation (FDR)	ARM	34,265	1,680	5%	
		R1.35		Bio-material Maintenance Treatments	Iowa State	50,000	4,000	8%	
		R1.36		Innovative Practical Approach To Assessing Bitumen Compatibility As A Means Of Material Specification	Cargill	204,119	121,686	60%	
		R1.37		Cold Asphalt Recycling Technologies using Rejuvenating Asphalt Emulsion: Impact; Implementation; Specification	UNH	141,440	141,400	100%	
		R1.38		Support Contract for T1.3.1 (SRF) Repair of Joint Associated Distress Pavements	Iowa State	4,972	4,972	100%	
	2020 Call for Innovation	R1.39		Pavement-Specific Structural Synthetic Fibers	UMD	99,792		0%	
		R1.40		Understanding and Improving Pavement Milling Operations	University of New Hampshire	100,000	11,651	12%	
		R1.41		Novel Methods for Adding Rejuvenators in Asphalt Mixtures with High Recycled Binder Ratios	NCAT	80,000	80,000	100%	
		R1.42		Impact of Polymer Modification on IDEAL-CT and I-FIT for Balanced Mix Design	NCAT	100,000	100,000	100%	
		R1.43		Asphalt Real Time Smoothness (ARTS) for Asphalt Paving	Transtec Group	104,021	95,677	92%	
		R1.44		Enhanced Entrained Air Void System Characterization for Durable Highway Concrete	TSU	100,000	100,000	100%	
		R1.45		Continuous Moisture Measurement during Pavement Foundation Construction	UTEP	100,000	41,045	41%	
	Totals =						\$ 4,828,757	\$ 4,116,531	85.3%

Attachment – B (NRRRA Phase-2 Financial Summary and Project Invoicing)

NRRRA Phase-2								
TPF-5(466) National Road Research Alliance - NRRRA Pooled fund								
For 2022 - quarter 2 report - updated 7/16/2022								
SPR Funding		SPR Dollars	Percent	Remaining	Comment			
SPR Funding	SPR - Pooled Funds (Expected from Agencies) =		\$ 7,209,163	51%	\$ 2,205,008	49% of the funds still waiting to be paid into MnDOT for this pooled fund effort		
	SPR - Pooled Funds (Received from Agencies) =		\$ 3,647,979					
	Non-SPR MnDOT money for Veta =		\$ 400,000					
	Past SPR rollover funding from Veta TPF5(334) for Veta =		\$ 196,163					
	(MnDOT Encumbered/EC Approved) for Projects =		\$ 5,600,318	72%		Money open for the EC to use		
SPR Invoiced (Spent) =		\$ 759,786	11%					
MnDOT State Funds	MnDOT Construction Funding for 2022 MnROAD Construction (budgeted) =		\$ 6,000,000					
NRRRA Associate funding (not included in this budget but used for NRRRA needs)		Used for NRRRA efforts --> MnDOT documented dollars						
Partnerships	FHWA Carbon Cure (400K) and ICT Team (188K) Partnership =		\$ 588,000					
Grand Total	\$ 13,797,163	SPR + Construction + FHWA funding						
SPR Dollars Budget/Spending								
NRRRA Focus	Project# Contract#	General Outcome / Deliverable	Vendors	EC Team Approved	Payments Invoiced	Payment Percent	Money Remaining	
Travel	TPF15466A	Agency travel / meals / meeting room costs		50,000	-	0%	50,000	
Sensors	TPF15466B	MnROAD Sensors, Equipment, Shipping for 2022 studies		350,000	234,763	67%	115,237	
MnROAD Labor	TPF15466C	MnROAD Staff - Labor for sensors and monitoring (5 years)	MnDOT	800,000	72,573	9%	727,427	
2021 ICT Funding	BUDGET NOTE	Total Funds for ICT = \$1,971,163 (2021 NRRRA Directed funding \$1,375,000 (includes FHWA 188K) then + 400K MnDOT + 196,163 TPF5(334) rollover)				Remaining for ICT	\$ 76,499	
	TPF15466D 1047755	Veta Web and Veta MDMS Standardized Platform	Transtec Group	1,894,664.08	353,431	19%	1,541,233	
2021 General Team Funding	BUDGET NOTE	Total Funds for Non-ICT Teams = \$2,525,000 (2021 NRRRA Directed funding \$2,125,000 + Missouri 400K funding)				Remaining Other Teams	\$ 319,347	
	TPF15466E 1048189	MnROAD Reflective Cracking Challenge (NRRRA)	UNH Auburn	230,499	-	0%	230,499	
	TBD	Reflective Cracking Challenge Coordination (Missouri - 400K) (400K from Missouri - not apart of the initial \$2,125,000 the EC approved)	University of Missouri-Columbia	400,000	-	Contract Development	400,000	
	TPF15466F 1048190	Use of Alternative Pozzolanic Materials Towards Reducing Cement Content in Concrete Pavements	Nichols Consulting APT	175,000	13,855	8%	161,145	
	TPF15466G 1048191	Use of Carbon Dioxide for Sustainable and Resilient Concrete Pavements (400K FHWA along with construction, sensors, monitoring)	Iowa State	150,000	-	0%	150,000	
	TPF15466H 1048192	The Use of Alternative Cementitious Materials in Concrete Pavements	Applied Pavement Technology - NCE	150,000	19,144	13%	130,856	
	TPF15466J 1048193	Performance Evaluation of Wicking Geotextiles for Improving Drainage and Stiffness of Road Foundation	Michigan State Michigan Tech/ Ingios	200,000	-	0%	200,000	
	TPF15466K 1048377	Reclamation and Recycling Techniques to Achieve Perpetual Pavements Characteristics	Braun Intertec	150,002	24,478	16%	125,525	
	TPF15466L 1036343(3)	Flooded Pavements Assessment App-Phase 2	UNH	200,234	21,538	11%	178,696	
	TPF15466M 1048485	Validation of Loose Mix Aging Procedures for Cracking Resistance Evaluation in Balanced Mix Design	Auburn University UNH - TTI	100,000	-	0%	100,000	
	TPF15466N 1048486	Perpetual Pavements in Wet Freeze Climate	RFP later in Fall 2022	200,000	-	Hold	200,000	
	TPF15466P 1048487	Thinlays as a PM Treatment	Terracon	49,918	20,004	40%	29,914	
	TPF15466R 1048488	Recycled Binder Availability	RFP later in Fall 2022	200,000	-	Hold	200,000	
	TPF15466S MniT SWIFT #214249	InfoPAVE MnROAD Database Support and Development	i-Engineering	300,000	-	0%	300,000	
				Totals =	5,600,318	759,786	13.6%	5,236,377