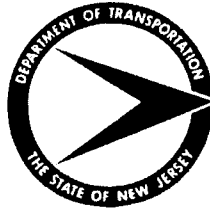
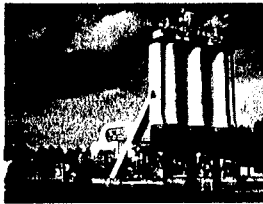


NEW JERSEY DEPARTMENT OF TRANSPORTATION



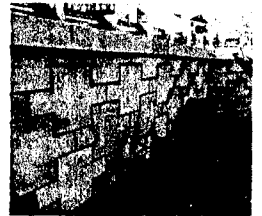
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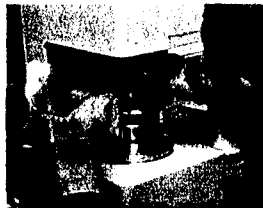


Annual Progress Report

April 1999



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Project Engineer

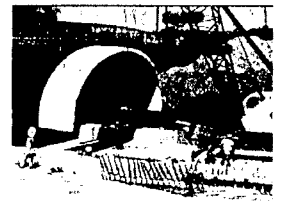


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ABSTRACT

The purpose of this report is to document the new technologies and products evaluation processes and procedures, and to record the present new technologies and products data base items that are approved for use, not approved, or under review and being demonstrated in experimental projects. Within the New Jersey Department of Transportation, the New Technologies and Products section is responsible for identifying, reviewing, evaluating, and rapidly deploying new technologies, products, and innovations that add value, reduce costs, and enhance the quality of the transportation system. The program prepares specifications and standards, and approves proprietary products for use on construction, maintenance and other highway projects.

The data base is a list of technologies, products and research being coordinated and evaluated by the New Technologies and Products section. The data base is compiled on the Microsoft Access program. The data base can be sorted by any field; queries and reports can be generated for any field. For review of data base, items are reported by highway related categories.

The product status classifications are: (1) Approved Pending Baseline Document Change, (2) Approved Pending Compliance Testing, (3) Approved on a Job by Job Basis, (4) Not Approved, (5) Review, (6) Demo Project, (7) File Closed. The New Technologies and Products Review, Evaluation and Approval Process flow chart shows the four step process for technology and product evaluation. The current data base printout is shown.

TABLE OF CONTENTS

	<u>Page</u>
ABSTRACT	iii
INTRODUCTION	1
Background	1
Purpose	3
EVALUATION PROCESS	4
DATA BASE	11
DATA BASE REPORTS	14
APPENDIX	39
Form QMS-NTP 1	40
Form QMS-NTP 2	42
New Technologies and Products Data Base Input	43

FIGURES

Figure 1: Review, Evaluation and Approval Process	6
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TABLES

Table 1: Products Evaluation List of NTP Research Projects	15
Table 2: Products Evaluation List of Demonstration Projects	16
Table 3: 1998 Approved Products List	20
Table 4: 1998 Not Approved Products List	24
Table 5: Product Review List - Category: Concrete	26
Table 6: Product Review List - Category: Drainage	27
Table 7: Product Review List - Category: Environmental	28
Table 8: Product Review List - Category: Equipment	29
Table 9: Product Review List - Category: Landscape	30
Table 10: Product Review List - Category: Materials	31
Table 11: Product Review List - Category: Pavements	33
Table 12: Product Review List - Category: Roadway	34
Table 13: Product Review List - Category: Safety	35
Table 14: Product Review List - Category: Structures	36
Table 15: Product Review List - Category: Traffic	37

INTRODUCTION

Background:

The construction, and maintenance functions of highway facilities necessitate specialized materials, proprietary manufactured products and various unique technologies to maintain and improve highway services while simultaneously reducing costs borne by the taxpayer. As vendors, innovators, and engineers propose such items, agencies must evaluate thoroughly before acceptance to provide assurance that the item will fill a specific need, provide a cost benefit, and not be detrimental to the transportation system. Tight budgets and limited tax revenues further necessitate the need to search out and evaluate new technologies and products.

The New Technologies and Products section has the primary responsibility for approval, implementation and development of specifications of approved technologies and products for the highway construction program. To assist the section, the New Jersey Quality Initiative subcommittee on Technology Deployment promotes the implementation of quality principles and practices throughout New Jersey's transportation industry through: proactive leadership, communication, partnering and quality programs and initiatives. The subcommittee aggressively searches out new technologies and products that will result in quality improvement in the way the NJDOT plans, designs, constructs and maintains our transportation infrastructure. The subcommittee consists of technical personal from the NJDOT, FHWA, Construction Industry, Consultants, Universities and the Transportation Authorities. The subcommittee provides industry input, implementation of results and specifications through interaction with the Industry, Consultants, Universities and NJDOT units.

Several other organizations provide input to this process. The National Transportation

Products Evaluation Program (NTPEP) was established by AASHTO in 1994 to provide transportation agencies with information on specific transportation products, and provide industry with a process for the evaluation of products. The NTPEP process initiates a partnering between industry and State transportation agencies to conduct the testing and evaluation under contract with AASHTO. The State agencies are paid by the NTPEP from funds collected from the manufacturers and suppliers that submit the product. A significant disadvantage to the NTPEP process is the limited number of products that can be tested and evaluated over a given period. A committee consensus is needed to develop the work plan and select appropriate products for testing.

The Highway Innovative Technology Evaluation Center (HITEC) is a national service center for implementing highway innovations. HITEC conducts evaluations of market ready products which are not covered by existing standards or specifications. HITEC does not develop specifications. The HITEC process begins with an application from the innovator/vendor which is reviewed by the Executive Committee. The committee establishes criteria to select products for evaluation and provides technical and policy guidance on operational aspects of HITEC. The committee also sets fees and establishes other funding mechanisms. After review by that committee, an evaluation panel of public and private sector volunteers is formed, an evaluation plan is developed, the research is executed by contract, and the final report is prepared. Similar to NTPEP, the HITEC is limited by the number of projects that it can manage in a given period. Both NTPEP and HITEC do not approve products or develop standard specifications for products.

The AASHTO Product Evaluation Listing (APEL) is a web site which is sponsored by the AASHTO Subcommittee on Materials. Funding is provided by NCHRP 20-7(82). The web site lists approved products and products under evaluation by State agencies, and provides direct DOT links

to agencies web pages and other program links for product evaluation.

Purpose

The purpose of this report is to document the new technologies and products evaluation processes and procedures, and to record the present new technologies and products data base items that are approved for use, not approved, under review and being demonstrated in experimental projects. Within the New Jersey Department of Transportation, the New Technologies and Products program is responsible for identifying, reviewing, evaluating, and rapidly deploying new technologies, products, and innovations that add value, reduce costs, and enhance the quality of the transportation system. The program prepares specifications and standards, and approves proprietary products for use on construction, maintenance and other highway related projects.

The objectives of the New Technologies and Products program are:

- to provide a single point contact for internal and external customers with new technologies and products' needs,
- to shorten the time cycle for product evaluation and research,
- to develop specifications for submitted items, and
- to expedite the implementation and specifications of approved technologies and products.

THE EVALUATION PROCESS

The NJDOT designates the New Technologies and Products section of the Quality Assurance, Improvements and Research unit of the Bureau of Quality Management Services as a single office to which vendors/originators are referred for new technology and product evaluations.

The section evaluates systematically new technologies and products that are related to the capital program. However, the process can also accept transit or other transportation technologies which are utilized by the NJDOT or other highway agencies.

The evaluation process begins when new technologies and products are submitted from the vendor or originator such as a Department operating unit or other agency representative. The item is submitted on a QMS-NTP form which is shown in Appendix A. On the form, vendors must identify the function of the product, the supplier and manufacturer of the product, and product safety information. The NTP section acknowledges the receipt of the product submission by a response to the vendor. The response includes a data base tracking number which is used in all future correspondence with the vendor. If the item is currently specified, it is referred to the appropriate operating unit for compliance testing. New products which are submitted for compliance testing against existing specifications, details and standards are included on the new technologies and products data base for future reference.

If the item is not currently specified by an existing NJDOT standard specification, it is submitted with the vendor's information to the operating units for their review of the product's use in the capital program. During this initial evaluation, the NTP section performs a literature/Internet search for product information from other agencies and product evaluation services, and checks for proof of vendor's claims regarding the merits of the new product.

After the product review by the operating units, the NTP section initiates a formal presentation by the vendor. The appropriate operating units are invited to the presentation. At the presentation, the potential use of the product is established, and a plan is developed to evaluate the product, and implement a new specification or modify an existing specification for the product. The plan includes the proposed approval process which can be (1) consensus of the operating units, (2) a positive review of the literature or recommendations from an evaluation service such as HITECH, and (3) demonstration projects to analyze the product for application to the capital program.

Demonstration projects are initiated on construction projects, maintenance activities and maintenance contract projects by the change order process. These projects are short term relative to research projects. Projects are located by telephone contacts with project managers and resident engineers, and selected by vendors who contact contractors and design consultants. The Value Engineering Unit is also a source of demonstration projects. To prepare specifications, two projects are selected for the demonstration.

When the final approval is completed, the NTP section prepares the documentation and the specification which is submitted to Configuration Management for adoption into the NJDOT standard specification.

The New Technologies and Products Review, Evaluation and Approval Process flow chart is shown in Figure 1. The chart shows the four step process for technology and product evaluation:

- Step #1 Initial Screening - The New Technologies and Products evaluation process begins when a vendor or originator contacts the Department to present an idea or product for use. The initial contact may be a presentation, telephone contact or letter

Step #1

Initial Contact
Phone/Presentation
From Originator
(NTP Forwards Form)

Originator Submits
Completed NTP Form

Data Base Entry

Originator Resubmits
Information

Step #2

Refer Product
Information to NJDOT
Customer/Operations
Technology
Deployment
subcommittee
for Review

Customer Submits
Response to
NTP

Request Additional
Information from
Vendor

Yes

Resubmit to Originator

No

Figure 1. New Technologies and Products Review, Evaluation and Approval Process

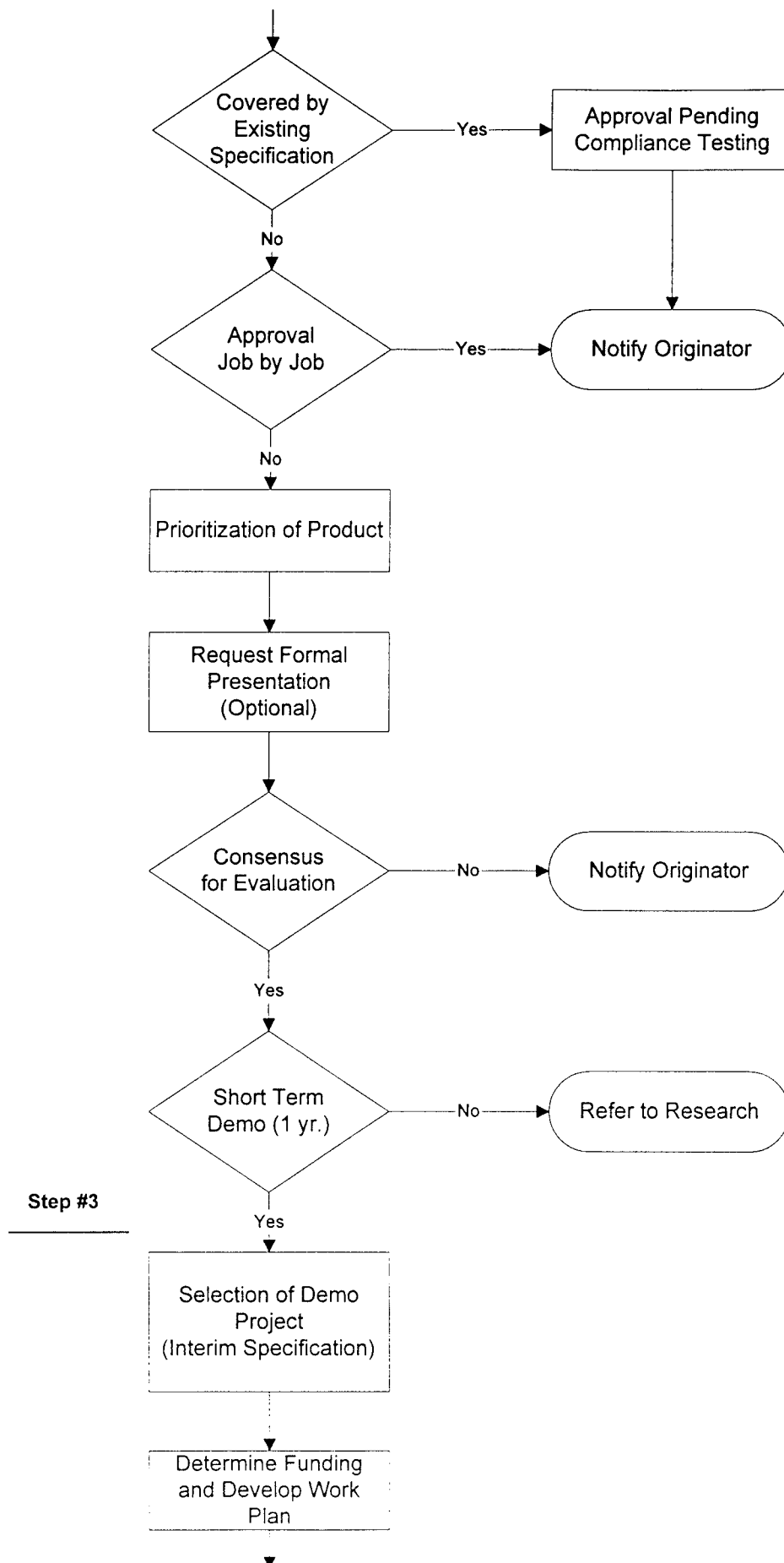


Figure 1 (Continued). New Technologies and Products Review, Evaluation and Approval Process

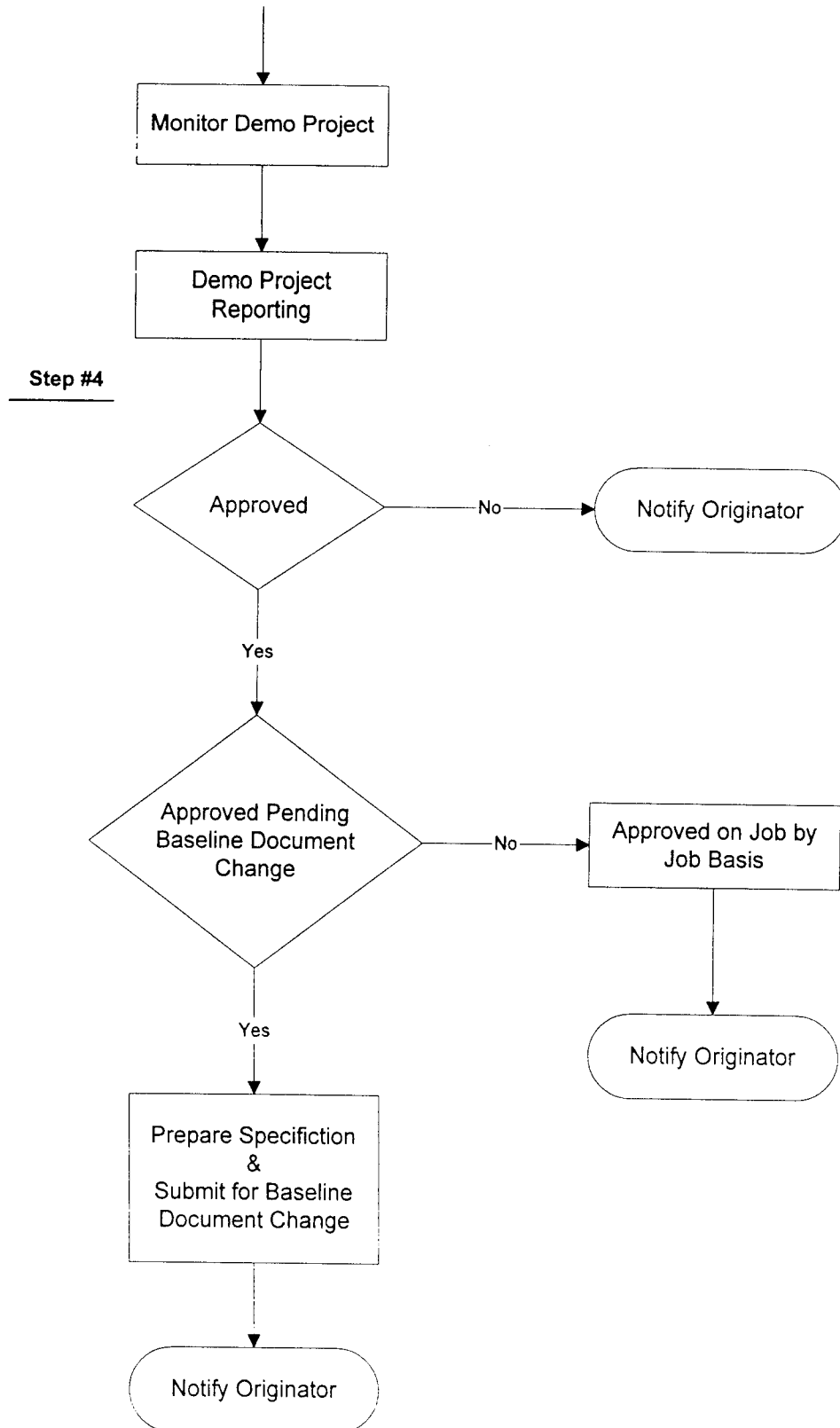


Figure 1 (Continued). New Technologies and Products Review, Evaluation and Approval Process

requesting a product evaluation. At that time, the originator completes a New Technologies and Products Evaluation Sheet (Form QMSNTP-1 See Appendix A). The information on the form is added to the computer data base. A note on the form requests the donation of the product for two demonstration projects and cooperation of the vendor for such projects. A literature search is performed from library sources, other state agencies, HITEC, NTPEP and other Internet data bases such as the National Transportation Library and the Center for Transportation and the Environment. The literature search is used as a tool to familiarize the reviewer with the product and it's uses, and to develop a reference point for future evaluations. During this initial review, products will be refused for the evaluation process if they are not pertinent to highway applications and are not practical for use. Products and technologies are entered into the data base with a "Review" status. A form letter is sent to the vendor to acknowledge the receipt of the product information. The letter contains the QMS Identification number for future reference.

- Step #2 Preliminary Evaluation - The QMSNTP -2 form which is shown in Appendix B, with the product information is completed by the NTP staff and forwarded to interested operations units. The form and comments are returned to the NTP section within three weeks. The NTP staff records a due date for the information on the data base. At this time additional information is requested from the vendor or the NTP section can request a formal presentation on the product. From the operations unit's comments, the product may be covered by an existing specification or it may be approved for on a job by job basis. The operation unit's

comments are also used for the prioritization of product evaluation and specification development. The NTP staff and managers assign priority to products and determine the need for short term evaluation or long term research investigation. The vendor is asked to donate the product for evaluation.

- Step #3 Demonstration Project Evaluation - The Project Managers, the Bureau of Construction, and the Bureau of Maintenance are contacted for appropriate projects. When a potential project is identified, a change order is prepared to incorporate the evaluation into the project. A work plan is prepared to show costs and tasks for the evaluation and testing. Any project funding is secured at this time. The NTP staff monitors the construction with the cooperation of the product vendor/originator and documents the construction with a construction report. A University may assist with the construction and data collection monitoring. After periodic observations and data collection, a final report is prepared to document the performance and evaluation of the product. The results are submitted to the vendor for his information.
- Step #4 Approval and Specifications - Using the conclusions, recommendations and evaluation data from the report, the final approval or disapproval is determined and the vendor is notified. The draft specifications are completed with the report and submitted to the operations unit for review and the Federal Highway Administration for information. The draft specifications, final report and product information is submitted to the Configuration Management unit for final NJDOT Standard Specifications.

DATA BASE

The data base is a list of all technologies, products and research being coordinated and evaluated by the New Technologies and Products section. The data base is compiled on the Microsoft Access program. The data base can be sorted by any field; queries and reports can be generated for any field. The NTP Input data fields are shown in Appendix C.

For review of data base, items are reported by highway related categories. The database items are categorized by the following broad categories:

- Asphalt - aggregates, asphalt cement, modifiers, polymers, additives (No new Asphalt related products are under review at the present.)
- Concrete - aggregates, cement, additives, corrosion inhibitors
- Drainage - pipe, culverts, liners
- Electrical - electrical wiring, components, (No new Electrical related products are under review at the present.),
- Environmental - remediated soils, wetlands
- Equipment - any equipment
- Landscape - slope stabilization, vegetation control, erosion protection
- Materials - joint sealers, epoxy, bonding agents, paints, coatings, graffiti removal
- Pavements - slab jacking, patching materials, reflection crack control
- Roadway - highway hardware, guiderail end treatments, attenuators, sign supports
- Research - Research projects with Universities and In-house staff are initiated to perform tests and evaluations of products and technologies. Such projects are usually a longer duration than product demonstration projects.
- Safety - cones, work zone safety, traffic stripes, curb delineators, safety vests, portable message signs,
- Structures - bridges, retaining walls, pilings, anchor systems, expansion joints
- Traffic - reflective sign sheeting.

The product status classifications are:

- Approved Pending Baseline Document change - Draft specifications are prepared after a demonstration project or research project and are submitted to the Configuration Management unit with report documentation for inclusion in the Standard Specification.
- Approved Pending Compliance Testing - The item is submitted to the Bureau of Materials for specification review and compliance testing against existing specifications.
- Approved on a Job by Job Basis - A letter of approval is submitted to the vendor to permit the use of the product as requested by the Project Manager for an individual construction project. Also, the Job by Job approval is given conditionally for products that were reviewed and approved by other agencies such as HITEC, the FHWA and State DOTs. The Job by Job approval facilitates the evaluation and development of demonstration projects for the final approval and specification development.
- Not Approved - The item is not approved after failing to prove the vendor's claims regarding the merits of a new product, and/or performs unsatisfactorily in demonstration tests.
- Review - Product review includes the initial review of the vendor's literature by the NTP section, review of other agencies data bases (HITEC, NTPEP, AASHTO-APEL) and review by the operation units. A product will remain in the Review status until a demonstration project, not approved, or approval is initiated.

- Demonstration Project - Products are utilized on construction and maintenance projects to evaluate their merit. Two demonstration projects are usually selected for the demonstration.
- File Closed - In a limited number of evaluations, vendors or originators fail to provide adequate information for products or the products are discontinued by the manufacturer before NTP action is taken.

DATA BASE REPORTS

The NTP section monitors ten active research projects. Two research studies were completed during 1998: (1) Controlled Low Strength Material (Flowable Fill), and (2) Review of Improved Compaction Equipment and Technology. The data base list of NTP Research Projects is shown in Table 1.

The NTP section is monitoring twenty eight active demonstration projects. The data base list of demonstration projects is shown in Table 2.

In 1998, the NTP section approved 29 items for use in highway construction and maintenance. The approved items are shown in Table 3 by approval status. Draft specifications are prepared for items which are approved pending baseline document change. The specifications and back up documentation is forwarded to the Configuration Management unit for final processing.

The NTP data base lists 8 items not approved for use in highway construction and maintenance. The not approved items are shown in Table 4.

In Tables 5 through 15, the data base lists 53 items under the review status since January 1998 by category excluding the Research studies. (No items are listed under Asphalt and Electrical) These items are being reviewed by operations units and a search is being conducted for demonstration project locations.

Table 1
New Technologies and Products Data Base
Product Evaluation List of NTP Research Projects

<i>QMS ID NO.</i>	<i>RESEARCH PROJECT</i>	<i>DESCRIPTION</i>	<i>RESEARCH SOURCE</i>	<i>REMARKS</i>
97-126	Corrosion Inhibitors	Field tests of Ferroguard, D.C.I., Rheocrete and Xypex on four bridge decks	Rutgers University CAIT	Construction completed Spring 1998 - Route 133 Hightstown by Pass
97-101	Environmental and Economic Effects of Using Recycled Materials	Data collection of experimental recycling projects	NJDOT	The 1998 data collection was completed on Crum Rubber and Asphalt Shingle projects.
99-001	Evaluation of SHRP Equipment for Concrete Bridge Components	New Technology study to assess SHRP equipment	Rutgers University CAIT	The work will begin in the spring of 1999.
97-032	Fence Post Drive Anchors	Pull out tests of the drive anchor system as alternate to concrete footing.	Rutgers University CAIT	Value Engineering study to test steel drive anchors for all soil conditions
99-002	Geotechnical Design Parameters Using the Seismic Piezoe	New Technology study of CPT soil investigations	Rutgers University CAIT	The work will begin in the spring of 1999.
99-003	Polymer Modified Asphalt Binders for Superpave Mixes	New Technology study of polymer modifiers	Rutgers University CAIT	The work will begin in the spring of 1999.
96-078	Portable Seismic Pavement Analyzer	Evaluation of hand held device for detection of delaminations in bridge decks	Rutgers University CAIT	The device was used on several bridge decks. The evaluation continues. It may be applicable to large reconstruction projects.
97-096	Recycled Asphalt Pavement & Recycle Concrete Aggregate	Laboratory and field tests Recycled Aggregate Base Courses	Rutgers University CAIT	The Final report was prepared and will be distributed In the Spring of 1999.
97-098	Recycled Materials in Portland Cement Concrete	Laboratory evaluation of recycled materials in PCC #7330	Rutgers University and New Jersey Institute of Technology	The final report is being prepared.
97-106	SHRP Product Review	Implementation of SHRP equipment and products	NJDOT	The NJDOT is purchasing several SHRP maintenance safety products for further review.

Table 2
New Technologies and Products Data Base

Product Evaluation List of Demonstration Projects

<i>QMS ID NO</i>	<i>PRODUCT NAME AND TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
98-033	Cold Grip	2 part solvent free polyurethane system uses colored aggregates for skid resistance and pavement coloring	Adbruf LTD	Demo project constructed by Union County Road Dept.
98-034	Colorplus	Acrylic based one part resin used to refurbish "Colorgrip" QMS ID# 98-033	Adbruf	Demo project constructed by Union County Road dept.
98-061	Colorset	2 part plastic acrylic paint for pavement marking and coloring	Statewide Traffic Safety	Pedestrian walkway painted in front of MOB on 1/2/98. 60 ft. x 3.5 ft.
97-125	D.C.I.	Corrosion Inhibitor for Concrete Structures	W. R. Grace	Included on Rt. 133, Sec. 8P Bridge Contract Spring 1998
98-026	EYE Ignitron	Mogul base high pressure sodium lamps with built in ignition	EYE Lighting International of N. A.	Demo constructed on Rt. 29 and Parkside Ave in Fall '98. Completion date - 1/2000
97-033	FERROGARD 901	Corrosion Inhibitor for Concrete Structures	SIKA	Included on RT 133, Sec 8P, Bridge Contract. Spring 1998.
98-065	Geofibers	Polypropylene fibers for soil reinforcement	Synthetic Industries, Inc.	Construction project by Florence Twp. is being monitored for performance until November 1999.
97-040	Iron Star	Raised Pavement Marker-Snow Plowable	Hallen Products, Ltd.	Nine month inspection complete. Mixed results.

<i>QMS ID NO</i>	<i>PRODUCT NAME AND TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
97-091	Joint Maker for longitudinal joints	Experimental device for making longitudinal joints in asphalt pavements	Trans Tech	Rt. 287 experimental longitudinal joint project.
97-113	LD-20	Rapidly curing 2-part urethane for stabilizing loose aggregate slopes and e	Specialty Products, Inc.	Rt. 169 at Ave. C slope stabilization performed by Maintenance in spring of 1996. Performance to date excellent. Additional safety info requested from mfg. Maintenance informed of potential for use as vegetation control.
97-055	Manhole and Extension Frames	Manhole and Catch Basin Risers	Andrew's Metal Products	Rt. 202 demo project. - 2 catch basins - 9/97 to 9/98. Extended 1 year for observations of snow plowing effects.
98-049	Manhole Risers (steel)	Steel extension rings	Morgan's Welding, Inc.	Lab testing passed in 11/13/98. Field demo to be arranged for spring/summer 1999.
98-050	Nightline A-250	Raised Pavement Marker	Nightline Markers, Inc.	Demo constructed on Rt. 15 in Sparta on 11/6/98. One year evaluation until 12/99.
98-066	Quadra Flex Series	Spring loaded temporary sign stand for construction work zones.	Services & Materials Co.	Samples being tested by Maintenance crews until November 1999.
98-077	Ray-O-Lite	Prismatic lens for snowplowable raised pavement markers	Pac-Tec, Inc.	Installed on Routes 206 and 15 in December 1998 for evaluation. Significant difference over standard is plastic lens face as opposed to glass.
97-045	RHEOCRETE 222	Corrosion Inhibitor for Concrete Structures	Master Builders, Inc.	Included on RT 133, Sec 8P, Bridge Contract Spring 1998
97-017	Sand Anti-Fracture System (SAF)	Reflection Crack Control Method	Koch Industries, Inc.	Routes 10 & I-287 ramp installation completed Winter '97.

<i>QMS ID NO</i>	<i>PRODUCT NAME AND TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
98-070	Series 620 - 3M Scotch Lane	Removable traffic tape	3M	Demo placed on Rt. 29 test section 9/98. Bureau of Materials conducting six month evaluation. Additional demo on Rt. 18 to be constructed 12/98.
96-046	Silicoflex Bridge Expansion Joint System	100% Base Silicone Expansion Joint Seal	RJ Watson	Initial demo on Rt. 295 failed in longitudinal joints. New Demo to be found for transverse joint.
96-062	Snap-Tite	Culvert Liner	ISCO	Current demo projects: Rt. 295, Rt. 130, Rt. 21.
98-071	Stamark 380-I	High performance permanent traffic tape.	3M	Field demonstrations conducted. Life cycle cost analysis needed.
96-060	Stimsonite 101 LPS	Bridge Marker	Stimonsite Corp.	Field demo in progress on RT. 34. Completion date extended to 5/99..
96-016	Stimsonite 101/101LP	Pavement Markers - Replaces 96,97LP,98,98LP	Stimonsite	Field demo in progress on Routes 34 & 70. Completion date 5/99. Extended one year due to mild winter (insufficient snow plowing)
96-079	Strieter-Lite	Animal warning reflector system (Deer Reflectors)	Strietelite	One mile demo site on Rt. 206 in Hillsborough constructed Spet. 98 to be monitored by Rutgers University for one year. Completion date 9/30/99.
98-025	Sunlux Ultra ACE HPS	High pressure sodium lamp replacement for mercury and metal halide lamp systems	EYE Lighting International of N. A.	Specification revision required.
97-086	Tagaway	Graffiti removal system	Equipment Trade Service Co., Inc.	Pending results of Anti Graffiti testing program to begin in spring '99.

<i>QMS ID NO</i>	<i>PRODUCT NAME AND TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
98-039	Taginator	Graffiti remover for unpainted masonry	Equipment Trade Service Co., Inc.	Pending results of Anti Graffiti testing program to begin in spring '99.
97-056	XYPEX	Corrosion Inhibitor/Waterproofing Admixture for Concrete Structures	XYPEX Chemical Corporation	Included on RT 133, Sec 8P, Bridge Contract Spring 1998

Table 3

New Technologies and Products Data Base

1998 APPROVED PRODUCTS LIST

<i>QMS ID NO</i>	<i>PRODUCT NAME /TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>APPROVAL STATUS</i>
97-104	AASHTO-PONTIS Bridge Management System	Program to analyze bridge maintenance and repair #7210	NJDOT	Approved Job by Job Basis
97-118	All Metal Breakaway Barricade	All metal Type III Breakaway Barricade	Flasher Handling	Approved Job-to-Job Basis
97-111	Barlok Precast Parapet	Precast parapet wall for bridges	J & R Slaw, Inc.	Approved Job by Job Basis
97-051	BEST System	Guardrail End Treatment	Buffalo Specialty Products, Inc.	Approved Job by Job Basis
96-070	Black Plastic Tape	Covers existing traffic stripes during construction	3M Traffic Control	Approved Pending Baseline Document Change
98-008	Breif Relief	Portable field lavatory	American Innotek, Inc.	Approved Job by Job Basis
98-054	Crafco Joint Adhesive	Joint adhesive for bituminous concrete paving	Crafo, Inc.	Approved Job by Job Basis

<i>QMS ID NO</i>	<i>PRODUCT NAME /TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>APPROVAL STATUS</i>
98-018	FLEAT 350	Flared energy absorbing guardrail end terminal	Road Systems, Inc.	Approved Pending Baseline Document Change
96-020	Flowable Fill	Backfill material for pipes	Various Concrete Mfg'r's.	Approved Pending Baseline Document Change
97-084	Fluid Viscous Damper	Earthquake, wind and traffic vibration detection	Taylor Devices, Inc.	Approved Job by Job Basis
99-004	Grooved Piping Products	Pipe fittings and connections for grooved pipe systems.	Central Sprinkler Co.	Approved Job-to-Job Basis
98-022	Guide Rail Curb	Semi-permanent traffic separator made of flexible vertical panels and snap	Klemmfix GMBH	Approved Job by Job Basis
98-002	Lifetime Blockouts	Guide rail offset blocks made of recycled materials	Lifetime Lumber Products	Approved Pending Compliance Testing
98-057	MPS - 350 III	Truck Mounted Attenuator	Trinity Industries, Inc.	Approved Pending Compliance Testing
97-071	Polydrain	Trench drain system	ABT, Inc.	Approved Job by Job Basis
97-005	Portable Message Sign	Portable Message Sign	ADDCCO	Approved Pending Compliance Testing
97-007	Portable Message Sign	Portable Message Sign	Advanced Safety Products	Approved Pending Compliance Testing

<i>QMS ID NO</i>	<i>PRODUCT NAME /TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>APPROVAL STATUS</i>
97-068	R-1560 Frame Type "E" Inlet	Inlet frame - Class 35	Neenah Foundry Co.	Approved Pending Baseline Document Change
98-059	Rhino Tube	High strength fence post	North American Steel Works	Approved Pending Compliance Testing
97-092	Road Widener Attachment Model SA	Shoulder paver	Midland Machinery Co.	Approved Job by Job Basis
96-052	Rumble Strip	Plastic pavement mounted device for slowing traffic speeds.	Astro Optics	Approved Job by Job Basis
97-093	Self Propelled Road Widener, MO SP	Self propelled shoulder paver	Midland Machinery Co.	Approved Job by Job Basis
97-036	Styletech EC Film	Protective film for reflective sheeting	Tape Technologies	Approved Pending Baseline Document Change
96-010	Tensor Retaining Wall	Comprised of rectangular precast concrete panels and polymeric earth reinforcement	Tensor Earth Technologies, Inc.	Approved Job by Job Basis
98-048	Traffix Sand Barrel System	Impact attenuator sand barrel	Traffix Devices, Inc.	Approved Pending Compliance Testing
97-066	TYFO'S Fibwrap System	Fiber composite for axial/flexural strength of Concrete	Hexcel-Fyfe Co.	Approved Job by Job Basis
99-015	Universal Spacer Breakaway bar.	Lap splice for breakaway sign posts.	Garden State Highway Products	Approved Pending Compliance Testing

<i>QMS ID NO</i>	<i>PRODUCT NAME /TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>APPROVAL STATUS</i>
98-017	Workforce All-Purpose Absorbent	Dust free, silica free spill absorbent	Marcal Paper Mills, Inc.	Approved Job by Job Basis
97-010	XJS Expansion Joint System	Asphalt Plug Expansion Joint/Bridge Decks	DOW Corning/SSI Construction & Industrial Material	Approved Pending Baseline Document Change

Table 4
New Technologies and Products Data Base

1998 Not Approved Products List

<i>QMS ID NO</i>	<i>PRODUCT NAME /TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
96-065	Star Seal	Pavement Sealer for asphalt pavements	Star, Inc.	Not suitable for high traffic bearing locations. Coal Tar based.
97-004	Guardian Barrier	Barrier Curb	Safety Barrier Systems	As per Bur. Construction & Configuration, Management. - Not practical, very limited use.
97-020	Chembright	Glow in the Dark Reflective Sign Sheeting	Lumica Light New York	Limited application for highway use. Retain file for future reference.
97-073	Stamark Horizontal Signage	Pavement signage / supplement for post mounted sign	3M	Two Demos constructed on 11/12/97 - Rt. 88 & 35 intersection and Rt. I-95 & 29 Rt. 95 & 29 demo - sign delaminated. Vendor informed 2/3/98
97-081	HOMEX 300	Compressed paper board/expansion joint/no bitumen	Homasote	Manufacturer asked in 10/97 to respond with information regarding change in product since last submitted. No response as of 12/13/98.
97-059	BREAK -SAFE	Breakaway Sign Support	Transpo Industries, Inc.	Proprietary, non-interchangeable system not recommended.
98-001	Optishield	Barrier mounted fiberglass protective C-channel cover for fiber-optic cable	Carsonite International	Impractical for NJDOT installations.

<i>QMS ID NO</i>	<i>PRODUCT NAME /TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
98-010	Crystal Clear	Anti Graffiti coating	Visual Pollution Technologies, Inc.	Hazardous material.

Table 5

New Technologies and Products Data Base

Product Review List - Category: CONCRETE

<i>QMS ID NO</i>	<i>PRODUCT NAME /TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
99-008	Dramix RC 80/60	Steel fibers for concrete reinforcement	Bekaert Corp.	Pending reviews and comments
98-004	Eclipse	Shrinkage reducing admixture for PCC	W. R. Grace	Lab testing to be conducted in summer '99.
98-047	Fibercon Fibers	Steel reinforcing fibers for concrete	Fibercon International Inc.	Pending review and comments
99-006	HITEK: Polybond; Shieldcrete	Polymer modified sealer	HITEK Fine Chemicals Pvt. Ltd.	Additional information requested.
98-056	Reval Stainless Steel Rebar	Stainless Steel Ribbed Reinforced Bar	Valbruna Corporation	Pending review and comments
98-005	T-SF	Microsilica/Portland cement blended @ 8.5%	Lafarge corp.	Lab testing to be conducted in Spring 99..

Table 6

New Technologies and Products Data Base

Product Review List - Category: Drainage

<i>QMS ID NO</i>	<i>PRODUCT NAME /TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
98-062	A-2 Liner Pipe	Liner for culvert and storm sewer pipes.	Contech Construction Products, Inc.	Demo being sought through Bur. of Maintenance.

Table 7

New Technologies and Products Data Base

Product Review List - Category: Environmental

<i>QMS ID NO</i>	<i>PRODUCT NAME /TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
99-005	Bulking & Tying Systems	Wetland creation/mitigation	Bionautics/SeaWards/Shoreguard	Presentation 1/19/99; Pending additional comments by the Bridge Unit.

Table 8

New Technologies and Products Data Base

Product Review List - Category: EQUIPMENT

<i>QMS ID NO</i>	<i>PRODUCT NAME /TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
99-011	COREXCO Corrosion Monitoring	Corrosion Monitoring Equipment; cathodic protection	COREXCO	Presentation held 1-25-99; follow up re interest by Structural Unit
99-018	Ground Penetrating Radar	Road & Bridge Inspection Services	Geophysical Survey Systems (GSSI)	Presentation 2/2/99; Vendor preparing demo proposal.
98-003	Portable Command Center	Suitcase-sized, self-contained, multi- operation, communications and process	308 Systems	Presentation to be set up for Spring '99.
99-014	Super Astencook 043	Portable bituminous recycler / pothole patcher.	Korea Asten Engineering Co.	Set up demo through Maintenance. State Forest or Rutgers parking lots

Table 9

New Technologies and Products Data Base

Product Review List - Category: LANDSCAPE

<i>QMS ID NO</i>	<i>PRODUCT NAME /TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
99-007	ArborTie	Flat, woven polypropylene straps for staking and guying trees and plant.	DeepRoot Fasteners L. P.	Pending comments and reviews.
98-006	Cable Concrete	Articulating concrete block revetment system	Bethlehem Precast, Inc.	Evaluation pending Value Engineering project.

Table 10

New Technologies and Products Data Base

Product Review List - Category: MATERIALS

<i>QMS ID NO</i>	<i>PRODUCT NAME/ TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
98-038	Capguard	Zinc-rich aluminum flakes coating for use as an alternate to hot dip galvanizing for pipes and conduits.	Capitol Manufacturing	Set up presentation for Spring of '99.
98-075	Defacer Eraser Graffiti control WB	Anti Graffiti coating - sacrificial	Prosoco, Inc.	Pending anti graffiti testing program in spring '99.
98-015	Finely Ground Recycled Glass	Recycled Glass for cement replacement	Recycling Concepts Int'l Group, Inc.	Sent to Rutgers University for comments.
98-029	GAT Graffiti Repellent	Non-Sacrificial graffiti repellent for masonry, wood, metal and other surfaces	Global Kinetics, Inc.	Pending testing program to begin in spring 1999.
98-011	Graffiti-Pruf	Anti graffiti coating/sacrificial design.	Visual Pollution Technologies, Inc.	Pending testing program to begin spring 1999.
98-016	Mobile Reflective Sheeting Stripping System	Sign stripping and reclaiming equipment	Hydro-Dyne	Demo not available until Fall '98. Vendor will contact us when ready. To be updated Spring 99.
98-012	Pirmakote	Anti Graffiti coating - Silicone based	Visual Pollution Technologies, Inc.	Pending Anti Graffiti test program to begin Spring 1999.

<i>QMS ID NO</i>	<i>PRODUCT NAME/ TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
98-027	Quick-Guard Silt Anchor/Gauge	Erosion and sediment control enhancement device	Enviro-Guard, LLC	Presentation to be arranged.
99-010	Recycled Asphalt Shingles and Roofing Materials	Post consumer roofing shingles for use in HMA	Tilcon New York, Inc.	Currently seeking demonstration projects through Tilcon
98-007	Roadflex/Roadpatch	Hot applied patching and sealing material	Road Techs, Inc.	Demonstration to be set up for mid Spring '99.
98-076	Stainless Steel Conduits	stainless steel conduit and pipe connections	Conduit Pipe Products	Additional info requested.
98-046	Top-Seal	Liquid polymer for use as soil stabilization	Soils Control International	Demo/presentation to be arranged for maintenance.

Table 11

New Technologies and Products Data Base

Product Review List - Category: PAVEMENT

<i>QMS ID NO</i>	<i>PRODUCT NAME/ TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
98-019	Flexolith	Bridge deck repair and overlay product. 100% solids, low modulus epoxy bin	Tamms Ind	Selecting demo.
98-064	Pavement Dressing Conditioner	Penetrating tar-oil rejuvenator for asphalt pavements	K. A. E. Paving Consultant, Inc.	Referred to Aeronautics Engineering for runway reconditioning. Update 12/98.

Table 12

New Technologies and Products Data Base

Products Review List - Category: ROADWAY

<i>QMS ID NO</i>	<i>PRODUCT NAME /TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
98-031	Break Safe Type MNJ	Omni directional breakaway sign base	Transpo Industries, Inc.	Demo being investigated.
98-074	Colored guiderail systems	Powder coated (colored) guiderail	Lane Enterprises	Presentation 1/28/99; seeking demo
98-037	REGENT	End terminal / Flared, gating, re-directive for guardrail ends	Energy Absorption System, Inc.	Candidate for QPL maintained by Config. Mngmt.
98-032	Turner Manhole Extension Rings	Manhole Extension rings made of polypropylene and fiberglass mixture.	FJ Turner Co.	Selecting demo. Vendor notified 1/21/99.
99-012	Type 1 and 4 Construction Barrier	Concrete construction barrier with inlaid reflectors. Applicable NJDOT spec. 617.03.2	Concrete Safety Systems	Pending further review by Configuration Management.

Table 13

New Technologies and Products Data Base

Product Review List - Category: SAFETY

<i>QMS ID NO</i>	<i>PRODUCT NAME /TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
98-052	Air Spill	Flexible-panel traffic channelaizer	Flasher Handling Corp.	Demo to be arranged with vendor. Site selection process under way.
98-040	Induction Lighting	Induction lighting for overhead signs, bridge/tunnel lighting	Conservation Sttion, Inc.	Additional info requested from vendor.
99-009	Multi-Barrier Safety Barricade	Portable plastic safety barrier	Off the Wall Products LLC	Pending reviews and comments
98-053	Opposing Traffic Lane Divider	Flexible-panel sign mounting stand	Flasher Handling Corp.	Demo to be arranged with vendor. Site selection process under way.
98-055	Total Containment Systems	Work platform & debris shielding system for bridge repair	Total Containment Systems, Inc.	Pending comments and review.

Table 14

New Technologies and Products Data Base

Product Review List - Category: STRUCTURES

<i>QMS ID NO</i>	<i>PRODUCT NAME /TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
98-073	3D Panel Wall System	Concrete-Polystyrene sound barrier	ICS 3D Panelworks, Inc.	Pending review and comments. Ang Associates, Inc. submitted test results.
98-023	Allan Block Retaining Walls	Modular concrete units and polymeric/welded wire mechanically stabilized earth retaining wall system	Clayton Block Co.	Needs HITEC review and demo project
98-058	BEBO Bridges System	Pre-engineered, precast, bridges system.	Rotondo Precast	Value Engineering to locate project for evaluation.
98-021	Inter-Lok	Consists of tieback/soil plate reinforcement system, precast concrete facig panels	Atlantic Concrete Products	Presentation held 7/23/98; HITEC is reviewing system, demo being sought.
98-072	SAFE (Secure Anchoring and Foundation Equipment)	Steel fin tube foundation	SAFE Secure Anchoring and Foundation Equipment, Inc.	Presentation 12-15-98; investigating Rt 30 installation and demo.
98-024	SIMS Digital Fiber Optic Motion Sensor System	Fiber optic sensor system for monitoring/predicting structural deterioration	Structural Integrity Monitoring Systems, Inc., "SIMS"	Vendor awaiting FHWA approval; Bridge selected test sites.

Table 15

New Technologies and Products Data Base

Product Review List - Category: TRAFFIC

<i>QMS ID NO</i>	<i>PRODUCT NAME /TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
99-016	All Sign Stop Sign	All plastic stop sign made of polycarbonate and Tedlar.	All Sign Products, Inc.	Pending review and comments.
98-063	Deltaline HCL	Preformed contrast traffic tape for permanant applications	Brite-Line technologies, Inc.	Seeking demo for Spring '99.
98-036	Epoplex LS-52 System	Two part epoxy traffic stripe	Epoplex Division of Stonehard	Vendor to notify us with demo location.
98-068	Flourescent LDP Reflective Sheeting 3963	Diamond grade flourescent sheeting for durable traffic control signs	3M	Requested product literature
99-017	LEDline	Externally powered LED pavement strip for traffic delineation.	HIL-Tech International Ltd.	Pending review and comments.
98-035	Qlamp / Iceltron	Induction lighting for roadways	Philips / Osram Sylvania	Requested additional information from vendor.

<i>QMS ID NO</i>	<i>PRODUCT NAME /TECHNOLOGY</i>	<i>DESCRIPTION</i>	<i>MANUFACTURER</i>	<i>REMARKS</i>
98-069	Roll Up Sign Sheeting (Scotchlite)	Scotchlite diamond grade flourescent roll up sign sheeting	3M	Requested additional product literature
99-013	Scotchlite Diamond Grade Flexible Work Zone Sheeting	Diamond grade reflective sheeting for reboundable traffic control devices.	3M	Pending review and comments
98-067	Scotchlite Flexible Work Zone Sheeting	Diamond Grade sheeting for reboundable traffic control devices (Drums)	3M	Requested additional product literature.

APPENDIX

APPENDIX A

New Jersey Department of Transportation
Quality Management Services

New Technologies and Products Evaluation Sheet

QMS ID No.

QMS CLASSIFICATION CODE

PLEASE TYPE OR PRINT CLEARLY

Trade Name	Patented ----- Yes ----- No ----- Applied For
Manufacturer	Representative
Street Address	Street Address
City State Zip Code	City State Zip Code
Telephone Fax No.	Telephone Fax No.

Technology, Product, Materials, or Process Identification:

Recommended Primary Use:

Recommended Alternative Use:

Outstanding Features, Advantages Claimed and Cost Benefits:

General Composition of Material (Attach Laboratory Report and Material Safety Data Sheets Where Applicable)

Estimated Cost Per Unit of Application	Can Demonstration Be Provided -----Yes -----No
Training Courses, Movies Available -----Yes -----No	Availability -----Seasonal -----Non-Seasonal
Delivery At Site -----Days After-----	Are Quantities Limited -----Yes -----No

Does Your Technology, Product, Material, or Process Meet Requirements of the Following Specifications.

_____ Yes _____ No If yes, Give Specification Numbers.

_____ AASHTO _____ ASTM _____ FED.SPEC. _____ N.J.D.O.T.

Has your product been tested by any of the following testing organizations? If so please list report number.

NTPEP _____ HITEC _____ Other _____
Report # _____ Report # _____

NASHTO _____ SASHTO _____
Report # _____ Report # _____

Is This Product Manufactured in the USA. _____ Yes _____ No

Is it Approved For Use By Other Highway Authorities or Other Agencies. _____ Yes _____ No

If Yes, State by Whom and Whether Use is Routine or Experimental. Also, Attach any Approval Letters.

If Proprietary, What Are Royalty Costs and On What Basis Are They Collected.

When Introduced On The Market	What Existing Technology, Product, Material , or Process Does it Replace?
-------------------------------	---

Background Description of Company and Its Item.

Who Recommended Contacting The N. J. Dept. of Transportation?

Has Another Office in the N. J. Dept. of Transportation Been Contacted? _____ Yes _____ No If YES, Explain.

NOTE: The Department requires two demonstration projects to qualify your technology or product for use on Department construction projects: Can you donate your technology or product in sufficient quantity for two demonstration projects? Please note that failure to do this will necessitate the acquiring of funding which may delay the evaluation and approval of your technology or product.

Yes, we will donate material for two demonstration projects. _____

No, we can not donate material for two demonstration projects. _____

Additional Information:

Type or Printed Name of Person Furnishing Information	Title
Signature	Date

APPENDIX B
New Jersey Department of Transportation
Quality Management Services
New Technology and Products Evaluation Sheet

QMS ID# _____

Date: _____

RETURN BY: _____

PRODUCT NAME:**MANUFACTURER:****DESCRIPTION:**

	YES	NO
Additional product information?	_____	_____
Product presentation by sponsor?	_____	_____
Product demonstration by sponsor?	_____	_____

COMMENTS:**Costs:****Evaluation:****Other:**

Name of Reviewer (print) _____

Please return this survey sheet only.
Do not return product literature
unless noted to do so.

Bureau or Section _____

Signature _____

Attach additional sheets if necessary

APPENDIX C
NEW TECHNOLOGIES AND PRODUCTS DATA BASE INPUT

GENERAL INFORMATION

Number:
QMS ID Number:
Category:
Subcategory:

MANUFACTURER AND PRODUCT INFORMATION

Product Name/Technology:
Description:
Manufacturer:
Address:

SUPPLIER INFORMATION

Contact:
Supplier:
Local Address:
Telephone:
FAX Number:

INITIAL STATUS

Date Initial Contact:
Date Out-(NTP- Forwarded):
Date Back-(NTP-1):
Date for Next/Final Action:
Date Resubmitted:

EVALUATION STATUS

Date Out-NTP-2(In-house Evaluation):
Date Back-NTP-2(In-house Evaluation):
Date of Demonstration:
Date Out-Testing:
Date Back-Testing Results:

APPROVAL/DISAPPROVAL STATUS

Date Sent to Configuration Management:
Date Approved:
Date Disapproved:
Date Closed:
Status
Remarks

