BEFORE THE CONTRACT REVIEW BOARD
OF THE METROPOLITAN SERVICE DISTRICT

FOR THE PURPOSE OF AUTHORIZING AN EXEMPTION TO METRO CODE CHAPTER 2.04.044, COMPETITIVE BIDDING PROCEDURES AND AUTHORIZING A SOLE-SOURCE CONTRACT WITH TAK ASSOCIATES ENGINEERING CONSULTANTS FOR A WASTE TIRE RECYCLING TECHNICAL ASSISTANCE PROJECT	))))))))	RESOLUTION NO. 90-1222 Introduced by Rena Cusma, Executive Officer

WHEREAS, The Council of the Metropolitan Service District established the Institutional Purchasing Program of the Waste Reduction Plan to stimulate market development and procurement of recycled waste products; and

WHEREAS, Considerable potential exists for the reuse of rubber in waste tires in combination with asphalt products; and

WHEREAS, Technical specifications, demonstration projects, and market assistance regarding the use of waste tires in asphalt would appear to considerably enhance the reuse of the waste tires; and

WHEREAS, The disposal of waste tires represent a critical problem in the Metro Region and statewide, creating unsightly and environmentally hazardous waste tire piles and illegal dumping; and

WHEREAS, TAK Associates Engineering Consultants, represented by Dr. Hossein Takallou, in collaboration with Dr. Garry Hicks, were the only parties identified, after a thorough search, who are qualified to perform this project as outlined in the contractual Scope of Work; and

WHEREAS, Pursuant to Metro Code Section 2.04.033, Council approval of this Contract is required because the contract will commit the District to expenditure of appropriations in Fiscal Year 1990-91 and the contract has not been exempted from this requirement by prior action of the Council.

WHEREAS, The resolution was submitted to the Executive Officer for consideration and was forwarded to the Council for approval; now, therefore,

BE IT RESOLVED,

(1) That based on the findings attached as Exhibit "A" and incorporated herein, the Contract Review Board hereby exempts the attached contract (Exhibit "B" hereto) with TAK Associates Consulting Engineers from the competitive bidding requirements under Metro Code Chapter 2.04.044;

(2) That pursuant to Metro Code Section 2.04.033(1) the Council approves the contract (Exhibit "B") with TAK Associates Consulting Engineers.

ADOPTED by the Contract Review Board and the Council of the Metropolitan Service District this 22nd day of February, 1990.

Tanya Collier, Presiding Officer

HSS:sg
SW901222.res
February 20, 1990

SOLID WASTE COMMITTEE REPORT

RESOLUTION NO. 90-1222, FOR THE PURPOSE OF APPROVING A SOLE SOURCE CONTRACT WITH TAK ASSOCIATES ENGINEERING CONSULTANTS FOR A WASTE TIRE RECYCLING TECHNICAL ASSISTANCE PROJECT

DATE: February 21, 1990 Presented by: Councilor Judy Wyers

Committee Recommendation: The Solid Waste Committee voted 4 to 1 to recommend Council adoption of Resolution No. 90-1222 as amended. Voting aye: Councilors Bauer, Buchanan, DeJardin and Wyers. Voting nay: Councilor Hansen. This action taken February 20, 1990.

Committee Discussion/Issues: Resolution No. 90-1222 provides for a sole source contract with TAK Associates Engineering Consultants for a waste tire recycling technical assistance project at a cost not to exceed $33,060.

Waste tires represent a significant solid waste problem. Approximately two million waste tires are discarded in Oregon each year. Less than half of the tires are reclaimed.

The purpose of the project is to demonstrate the feasibility of using rubber from waste tires into paving projects in Oregon. Modification of generic specifications for rubber-modified asphalt concrete to make them specific to Oregon is a key element of the contract and is necessary in order to successfully complete the project. The Oregon Highway Department does not plan to develop specifications due to other priorities and lack of expertise. The Highway Department, however, is interested in the project and has indicated their willingness to cooperate.

According to Solid Waste Department staff, an effort was made to locate prospects to undertake the technical assistance project. Their investigation indicates that the only research consultants with significant experience in the area of rubber modified asphalt concrete are Dr. Hossein Takallow, TAK Associates Engineering Consultants, and Dr. Garry Hicks, Department of Engineering, Oregon State University. Thus, the request for a sole source contract.

The Solid Waste Committee asked staff what happens to the steel in the waste tires? Staff stated that steel, wire and fabrics need to be removed before the rubber can be used in the asphalt.

The Committee asked why the standards and specifications for rubber modified asphalt in other states could not be used in Oregon? Staff said that many states have developed laws requiring their transportation departments to amend their respective procedures and specifications to include rubber asphalt. No such law exists in Oregon. Conditions are not the same in Oregon and without Oregon specifications, it is unlikely

that there would be a widespread use of rubber modified asphalt concrete.

The Committee expressed concern that the proposed project not injure existing efforts to reclaim waste tires by such companies as Waste Recovery located in Portland. Staff stated that this is a feasibility study and does represent a present threat.

The Committee amended the BE IT RESOLVED section of Resolution No. 90-1222 by using two numbered paragraphs instead of one unnumbered paragraph, and added another reference to the Metro Code (Section 2.04.033(1)). The intent of the resolution was not changed.

JW:RB:pa

A:\RB.153

STAFF REPORT **EXHIBIT "A"**

CONSIDERATION OF RESOLUTION NO. 90-1222 FOR THE PURPOSE OF APPROVING A SOLE SOURCE CONTRACT WITH TAK ASSOCIATES ENGINEERING CONSULTANTS FOR A WASTE TIRE RECYCLING TECHNICAL ASSISTANCE PROJECT

Date: February 20, 1990 Presented by: Bob Martin
Debbie Gorham

FACTUAL BACKGROUND AND ANALYSIS

Waste tires represent a significant solid waste problem. Nearly two million waste tires are discarded each year in Oregon, yet less than half are reclaimed. Concern about the growing numbers of waste tires has led the Oregon Legislature, the Oregon Department of Environmental Quality and Metro to established programs to ameliorate the problem as follows:

1. The 1987 Oregon Legislature passed a bill which, among other things, established a Waste Tire Recycling Account. The Account is used to partially reimburse the end users of waste tires and to fund cleanup of existing tire piles.

2. Recently, the Department of Environmental Quality established a sub-fund for construction projects up to $100,000 that demonstrate new uses for waste tires.

3. In 1989 Metro established the Institutional Purchasing Program of the Waste Reduction Plan to stimulate market development and procurement of recycled solid waste products such as waste tires. As of January 1990 the Waste Reduction Plan requires Metro to provide local governments, businesses and public institutions that are potential large users of items made from recycled material with technical assistance on the purchase and use of recycled products. The unilateral order requires that technical assistance include demonstration projects.

Waste tires have a strong potential for reuse and recycling, but that potential has been restricted by lack of market development. The proposed Waste Tire Recycling Technical Assistance Project puts teeth in state and regional programs for market development relative to waste tires. It represents a joint effort by Metro and DEQ to develop a new, sustainable, environmentally sound use for waste tires in Oregon.

The DEQ will pay for approximately half the project (up to $17,270 in the event of two demonstration projects) through an interagency agreement. In addition, the DEQ's Waste Tire Account can be tapped by paving contractors using rubber from waste tires

in paving demonstration projects. Construction costs can be covered up to $100,000 per approved demonstration project.

A key element of the proposed contract is the development of specifications for rubber modified asphalt concrete. Many states have developed laws requiring their transportation departments to amend their respective procedures and specifications to include rubber asphalt. No such law exists in Oregon. Without Oregon-specific specifications, widespread use of rubber modified asphalt concrete will be unlikely.

The Oregon Highway Department is disinclined to develop specifications voluntarily due to other priorities and lack of expertise in the area. The proposed project would provide the necessary expertise and assistance to the Highway Department for the development of an Oregon-specific rubber paving technology. The Highway Department has expressed a willingness to cooperate. Several road engineers from local jurisdictions within and without Metro boundaries have requested to be included in the technical assistance workshops.

SOLE SOURCE JUSTIFICATION

Desirable criteria to undertake this study are (1) practical experience with rubberized asphalt AND rubber-modified asphalt concrete, (2) quality research background in the area of rubber-modified asphalt which could be parlayed into a publishable article, (3) working knowledge of cost-comparison methodologies for asphalt, (4) familiarity with the city, county, state engineers in Oregon and their specification requirements relative to asphalt, (5) licensed professional engineering background, (6) offices within Oregon to provide accessibility during the 9-month project, (7) capacity to conduct field evaluations, and (8) ability to work well with public engineers, planners and private producers within a political environment.

An effort was made to locate prospects to undertake this project by searching the literature relative to rubberized asphalt and by contacting paving engineers and asphalt producers. Our investigation indicates that Dr. Hossein Takallou, TAK ASSOCIATES ENGINEERING CONSULTANTS, and Dr. Garry Hicks, Department of Engineering, Oregon State University, are the **only** research consultants with significant experience in the area of rubber modified asphalt concrete.

Dr. Hossein Takallou, TAK ASSOCIATES ENGINEERING CONSULTANTS, Portland, and Dr. Gary Hicks, Oregon State University, are collaborators on this project. They have been working together for the past seven years in the area of rubber modified asphalt as consultants to the Federal Highway Administration, Oregon Highway Department and several other state highway departments. Their expertise is widely sought throughout the United States.

Awarding this contract to TAK ASSOCIATES on a sole source basis will not, therefore, reduce competition. It will result in a savings to Metro due to the uniquely relevant expertise of the consultants and their familiarity with the parties receiving the technical assistance.

EXECUTIVE OFFICER'S RECOMMENDATION

The Executive Officer recommends adoption of Resolution No. 90-1222.

EXHIBIT "B"

Contract No. _____

PERSONAL SERVICES AGREEMENT

THIS AGREEMENT dated this _____ day of _____ 19__, is between the METROPOLITAN SERVICE DISTRICT, a municipal corporation, hereinafter referred to as "METRO," whose address is 2000 S.W. First Avenue, Portland, OR 97201-5398, and TAK ASSOCIATES ENGINEERING CONSULTANTS, hereinafter referred to as "CONTRACTOR," whose address is One S.W. Columbia Street, Suite 520, Portland, Oregon 97258 for the period of March 1, 1990, through December 1, 1990, and for any extensions thereafter pursuant to written agreement of both parties.

W I T N E S S E T H :

WHEREAS, This Agreement is exclusively for Personal Services;

NOW, THEREFORE, IT IS MUTUALLY AGREED AS FOLLOWS:

CONTRACTOR AGREES:

1. To perform the services and deliver to METRO the services described in the Scope of Work attached hereto;

2. To provide all services and materials in a competent and professional manner in accordance with the Scope of Work;

3. All applicable provisions of ORS chapters 187 and 279, and all other terms and conditions necessary to be inserted into public contracts in the State of Oregon, are hereby incorporated as if such provision were a part of this Agreement, including but not limited to ORS 279.310 to 279.320.

Specifically, it is a condition of this contract that Contractor and all employers working under this this Agreement are subject employers that will comply with ORS 656.017 as required by 1989 Oregon Laws Chapter 684;

4. To maintain records relating to the Scope of work using generally recognized accounting methods and to make said records available to METRO at mutually convenient times;

5. To indemnify and hold METRO, its agents and employees harmless from any and all claims, demands, damages, actions, losses and expenses, including attorney's fees, arising out of or in any way connected with its performance of this Agreement, with any patent infringement arising out of the use of CONTRACTOR'S designs or other materials by METRO and for any claims or disputes involving subcontractors;

6. To comply with any other "Contract Provisions" attached hereto as so labeled; and

7. CONTRACTOR shall be an independent contractor for all purposes, shall be entitled to no compensation other than the compensation provided for in the Agreement. CONTRACTOR hereby certifies that it is the direct responsibility employer as provided in ORS 656.407 or a contributing employer as provided in ORS 656.411.

In the event CONTRACTOR is to perform the services described in this Agreement without the assistance of others, CONTRACTOR hereby agrees to file a joint declaration with METRO to the effect that CONTRACTOR services are those of an independent contractor as provided under Chapter 864 Oregon Laws, 1979.

METRO AGREES:

1. To pay CONTRACTOR for services performed and materials delivered in the maximum sum of THIRTY-THREE THOUSAND SIXTY AND NO/100THS DOLLARS ($33,060.00) including two demonstration projects, or TWENTY-NINE THOUSAND TWO HUNDRED SEVENTY-FIVE AND NO/100 DOLLARS ($29,275.00) for one demonstration project, and in the manner and at the time designated in the Scope of Work; and

2. To provide full information regarding its requirements for the Scope of Work.

BOTH PARTIES AGREE:

1. That METRO may terminate this Agreement upon giving CONTRACTOR five (5) days written notice without waiving any claims or remedies it may have against CONTRACTOR;

2. That, in the event of termination, METRO shall pay CONTRACTOR for services performed and materials delivered prior to the date of termination; but shall not be liable for indirect or consequential damages;

3. That, in the event of any litigation concerning this Agreement, the prevailing party shall be entitled to reasonable attorney's fees and court costs, including fees and costs on appeal to an appellate court;

4. That this Agreement is binding on each party, its successors, assigns, and legal representatives and may not, under any condition, be assigned or transferred by either party; and

5. That this Agreement may be amended only by the written agreement of both parties.

TAK ASSOCIATES ENGINEERING CONSULTANTS	METROPOLITAN SERVICE DISTRICT
By: _____	By: _____
Date: _____	Date: _____

APPROVED AS TO FORM:

By: _____

Date: _____

HSS:aey
TAK.CON
February 8, 1990

DRAFT

SCOPE OF WORK

WASTE TIRE RECYCLING TECHNICAL ASSISTANCE PROJECT: MODIFICATION OF PAVING SPECIFICATIONS AND USE IN ONE OR TWO ON-SITE APPLICATIONS

Project Purpose

The purpose of this project is to demonstrate the feasibility of using rubber from waste tires in paving projects in Oregon. Outreach to state and local governments, paving contractors and rubber processors is intended to stimulate paving projects using rubber modified asphalt concrete during the calendar year 1990. Modification of generic specifications for rubber-modified asphalt concrete to make them specific to Oregon is a necessary prerequisite to successful completion of this project.

Project Components

1. Modification of existing public-domain generic specifications for rubber-modified asphalt concrete to Oregon specifications, and working with the Oregon Highway Department and local paving contractors to gain their acceptance of these paving specifications.

2. Production of a final format for paving specifications suitable for inclusion in the Oregon Highway Department's Green Book.

3. Outreach including technical assistance to road agency engineers and paving contractors.

4. Outreach including technical assistance to local governments and others critical to demonstration project implementation.

5. Outreach to prospective crumb rubber processors to generate raw material for paving demonstration projects and to assess the feasibility of long-term supply.

6. Development of one or two rubber-modified asphalt concrete paving demonstration projects with local governments using specifications developed.

Specific Work to be Accomplished

Task I Modification of Existing Public Domain Generic Specifications for Rubber-Modified Asphalt Concrete to Develop Generic Mix Design and Construction Specifications for Use in Oregon; and Recommendations for Use of Rubberized Paving (Due: June 1, 1990 or 90 days after effective date of Intergovernmental Agreement, whichever is later)

Modify existing public domain generic specifications, including those developed for the state of New York, for rubber-modified asphalt concrete to result in guide mix design and specifications that jibe with Oregon standards, practices and conditions. Specifications should be in format suitable for inclusion in the Oregon Highway Department "Green Book." Recommend conditions under which rubberized paving is most appropriate and cost-effective in Oregon. Procedure for accomplishing these objectives should include:

a. Determine or verify the type of preprocessing (including sizing) of the ground tire rubber which has the potential to produce acceptable properties in asphalt concrete mixtures used by ODOT.

b. Identify properties of rubber asphalt concrete with ground tire rubber which could be used as a specification requirement.

c. Determine the range of the amount of ground tire rubber which could be incorporated into the asphalt cement mixture without a detrimental effect on mixture properties.

d. Identify and justify any changes in mix design specifications and procedures for mixtures using rubber-modified asphalt concrete.

e. Determine or verify the field method of incorporation of the ground tire rubber into asphalt cement and aggregate mixture. Identify special equipment needed, if any, and any changes in production temperatures, time and so forth.

f. Identify and justify any changes in specifications and procedures for mix production, laydown, and compaction of mixtures using rubber-modified asphalt concrete.

g. Determine the effect of the ground tire rubber in the extraction test which is currently used for contractor quality assurance testing. Identify any changes or modifications which may be necessary.

h. Determine the effect rubber modified asphalt concrete would have on plant production, laydown and compaction operations.

i. Determine the effect of rubber on pavement performance and life of mixtures.

j. Determine optimum percentage and type of used rubber in rubber-modified asphalt for construction and improvement of state and local roadways.

k. Develop generic specifications for rubber-modified asphalt in a format suitable for incroporation in the Oregon Highway Department "Green Book." Provide copy of specifications to Metro and DEQ.

l. Obtain the Federal Highway Administration's endorsement of generic rubber-modified asphalt concrete for construction or improvement of Oregon highways.

m. Recommend applications and conditions in Oregon where rubber-modified asphalt concrete is most appropriate and cost-effective. Provide copy of recommendations to Metro and DEQ.

n. Contractor shall work directly with members of the Oregon Highway Department Paving Committee, Materials and Research Division, and engineers of local jurisdictions in the region during this process to ensure acceptability of specifications developed.

o. The above-mentioned activities (a through n) will be addressed by:

(1) Reviewing the standard tests and procedures used by ODOT; specifications provided in OSHTA, ASTM, APWA and other specifications utilized by local and state agencies for the purpose of asphalt construction;

(2) Making a list of the items (e.g., materials standards, construction methods, measurement methods, basis for payment) that would be affected by inclusion of tire rubber in the asphalt mixtures;

(3) Reviewing and evaluating existing studies, analyses, pilot projects conducted at city, county, state and national and international levels relative to project specifications, conditions and results;

(4) Comparing project costs of conventional asphalt

mixes to costs of rubber-modified asphalt mixes;

(5) Comparing application methods of conventional paving materials to rubber-modified materials and the ability to adapt equipment and processes used in Oregon to new specifications;

(6) Comparing performance of rubber-modified asphalt projects to conventional paving projects with regard to longevity, traction, glare, noise, icing and such other characteristics as may be appropriate;

(7) Applying existing knowledge base regarding rubber-modified asphalt to the development of specifications that jibe with Oregon standards, practices and conditions; and

(8) Verifying with state and local asphalt specifications personnel that the proposed specifications are viable.

Task II Provide Technical Assistance to Road Agency Engineers

a. Evaluate three rubber-modified asphalt concrete pavement demonstration areas in the city of Corvallis, Benton County and Highway 97 in Deschutes County, comparing results of rubberized asphalt installations with control group installations in Oregon. Base evaluation upon the manual adopted by the Federal Highway Administration entitled "Distress Identification Manual for Pavement." Compute a pavement condition index (PCI) for each sample installation as described in the manual.

b. Summarize existing reports comparing performance of rubber-modified asphalt concrete projects to conventional paving projects with regard to longevity, traction, glare, noise, icing and other appropriate characteristics.

c. Prepare a report on the above results and costs, including technical data related to construction methods, percentage of rubber utilized, performance and cost of the rubber-modified asphalt concrete projects compared with control group projects.

d. Distribute reports to Metro and DEQ and to road engineers at the technical assistance meetings described below.

e. Conduct an audio study comparing noise (decibel) levels of rubber-modified asphalt installations with noise levels of adjacent conventional asphalt installations

in Oregon. Comparison should be of similar vehicle mix and speeds and weather conditions. Prepare outline of study for Metro by April 15, 1990.

f. Prepare an audio-visual presentation using existing slides and audio recordings of the above results, stressing comparisons of performance of rubber-modified asphalt concrete with control sections. Obtain pre-approval of presentation outline from Metro and DEQ by May 15, 1990. Supply Metro and DEQ with slides and audio tapes. Metro will put presentation in professional form if it so desires.

g. Deliver audio-visual presentation at one of the technical assistance meetings described below by July 1, 1990. Presentation should highlight noise and pavement condition studies relative to rubber-modified asphalt in Oregon and elsewhere.

h. Conduct a value engineering study of life cycle cost analysis of rubber asphalt concrete to determine the economic feasibility of using rubber-modified asphalt concrete on roadways in the Metro area. Compare the cost of Oregon generic and PlusRide mixes with conventional asphalt mixes.

i. Publish results of life cycle study in a report and submit to Metro and DEQ.

j. Distribute report to city and county engineers at technical assistance seminars.

k. Determine the quantity of rubber that would be used annually in the region if the percentage of rubber content recommended by Contractor were utilized in rubber-modified asphalt paving mixtures for all contracts for the construction or improvement of state and local highways in the region where conditions are optimum.

l. Determine the quantity of used tires that would be eliminated from the wastestream if the optimum amount of rubber were used for all paving contracts in the region.

Task III <u>Provide Technical Assistance to Local Governments, Paving Contractors, Paving Engineers and Tire Processors to Stimulate Demonstration Projects</u>

Conduct five half-day seminars and provide individualized assistance to local governments. Obtain participation in workshops by local government engineers (as approved by Metro and DEQ) in

presentation and conduct of first four seminars. Under the auspices of Metro, plan and conduct five (5) half-day seminars for:

- Planners and engineers of city and county departments of transportation (Washington, Clackamas and Multnomah counties),
- Planners of solid waste agencies in the region,
- Prospective tire processors,
- Paving contractors in the region,
- Federal Highway Administration engineers, and
- Oregon Highway Department personnel dealing with paving specifications and research.

Completion Dates: Tasks (a) and (b) August 1, 1990. Tasks (c) and (d) by December 1, 1990.

a. One half-day seminar will be provided for all of the above parties. This seminar will define:

(1) Scope of the waste tire problem,

(2) Potential of rubber-modified asphalt to solve the regional solid waste problem,

(3) Methods of cost analysis applicable to rubber modified asphalt concrete,

(4) Needs assessment relative to establishment of a raw materials processing-recycling facility,

(5) Modified specifications for rubber-modified asphalt concrete,

(6) Recommendations for appropriate and cost-effective applications in Oregon and optimum and appropriate percentages of used rubber for construction and improvement of state and local roadways,

(7) The quantity of used tires that would be used annually if the optimum percentage of rubber content were utilized in rubber-modified asphalt paving mixtures in all contracts for the construction and improvement of state and local roadways,

(8) Existing and potential impediments to maximum utilization of rubber-modified asphalt,

(9) An audio-visual presentation of experimental sites in Oregon and elsewhere, including construction technology, site conditions and results of testing and audio study.

b. Hold three half-day workshops to provide technical assistance to paving engineers (one workshop each for Multnomah, Washington and Clackamas Counties and all the cities within each county). Technical assistance will address concerns of local engineers relative to:

(1) Specifications and preferred circumstances and conditions for application,

(2) Cost analysis,

(3) Construction methods,

(4) Material requirement ranges for various road conditions, road types, road mileage by surface type,

(5) Estimated annual budget for pavement maintenance and rehabilitation for each jurisdiction,

(6) Type of pavement distress for each jurisdiction in the metro region,

(7) Effectiveness of rubber-modified asphalt to remedy the types of pavement distress identified in the region.

(8) Audio-visual presentation from Task II.

(9) Identification of three to four possible demonstration paving projects.

First four workshops due: by August 1, 1990.

c. Provide individualized assistance to selected local governments to develop mix designs, lay down and evaluate up to two paving demonstration projects of at least one-quarter mile each. Demonstration projects should conform to Oregon generic specifications for rubber-modified asphalt concrete and recommendations for best use situations from Task I. The DEQ shall approve in advance which demonstration projects are to receive this additional assistance. (Due: during 1990 paving season. All task elements to be completed by December 1, 1990.)

(1) Assist the DEQ with screening and selecting candidates for paving demonstration projects.

(2) Assist two local government candidate(s) to write and advertise paving specifications.

(3) Provide pre-bid conference for candidate

project(s).

(4) Assist local government(s) to develop mix design.

(5) Assist local governments and/or contractors with project laydown for up to 16 hours for each project.

(6) Provide follow-up with contractor upon completion of laydown.

(7) i) Obtain commitment from the Federal Highway Administration to do an evaluation of one project, and work with them to develop a work plan addressing issues identified by local authorities as needing resolution.

ii) Prepare a formal request that the Federal Highway Administration evaluate the second project, if any, addressing issues identified by local authorities as still needing resolution.

(8) Write a paving report evaluating the demonstration project(s), noting amount of pavement laid, length of project, cost, etc., and submit to Metro and the DEQ.

d. At the conclusion of the individualized technical assistance program, conduct one half-day workshop for planners and engineers to provide project evaluation follow-up and determine methods for overcoming impediments:

(1) To the use of rubber-modified asphalt on all roadway systems in the region and

(2) To the establishment of recycling and raw materials production center.

(3) To the incorporation of specifications in Highway Department's "Green Book," if any.

e. Include ample time for discussion and questions in each workshop.

Task IV <u>Industry Feasibility Study to Identify Crumb Rubber Processing Facility for Demonstration Projects and Long-term Supply</u>

a. Review and evaluate the existing waste tire recycling markets and the feasibility of increasing these markets through a positive procurement policy.

b. Identify and evaluate recycling methods based upon

state reduce-reuse-recycle hierarchy of waste reduction.

c. For each method of recycling evaluate:

(1) Economic feasibility and market potential in the Metro area;

(2) The impact of a paving procurement policy on a reduction of the number of tires in the Tri-County wastestream.

d. Report in matrix format:

(1) The amount of tires being recycled,

(2) Current and projected tipping fees,

(3) Future expansion plans,

(4) Financial stability,

(5) Level of interest in establishing a tire recycling/paving raw materials processing center for the region,

(6) Requirements relative to such expansion,

(7) Market share relative to recycling and processing of used tires, and

(8) Cost of raw material for paving.

e. Develop a plan of action to provide raw material for the paving demonstration projects by June 1989 and future paving projects. Submit copies of survey and plan of action to Metro and DEQ by July 1, 1990.

As part of this task, the principal investigator will interview in person or by phone representatives of all businesses listed on Table 1 and any others suggested by Metro which may have the potential of becoming a tire recycling/paving raw materials processing facility.

V. <u>Follow-up to Ensure Adoption of Specifications by the Oregon Highway Department and Submit Project Report</u>

a. Conduct follow-up meetings with Oregon Highway Department and Paving Committee to ensure adoption of specifications.

b. Write a final project report for participants summarizing the results of efforts to develop specifications and demonstration projects, barriers to

expanded use of rubber-modified asphalt conrete, and recommendations for surmounting them. Submit report to Metro and DEQ within one month from followup workshop.

Terms of Payment

1. Metro will accept billing from TAK Associates Engineering Consultants following the completion of all tasks for an amount not to exceed $31,960 including two demonstration projects. In the case of one demonstration project, the total project cost would be reduced by $2,685 to $29,275. Allowable expenses and clerical services shall not exceed an additional $1,100, or a total possible project cost of $33,060.

2. The project including all reports will be completed and submitted to Metro and DEQ by December 1, 1990.

3. Contractor shall prepare itemized billings on a monthly basis detailing hours spent on specific tasks and expenses incurred to date. Hours worked shall be to the nearest half hour. Contractor's hourly rate shall conform to the rate schedule included in this contract. The names, titles and resumes of all persons serving on this project shall be provided to Metro in advance. The names and titles and hours worked by each principal or staff person shall be provided on a monthly basis. Clerical services shall be provided at a rate of $20 per hour and shall not exceed $700 total.

4. Allowable expenses not to exceed $400 and other than contractor's hourly fees, including film for slides, development of slides, audio tapes, pre-approved telephone, copying, pre-approved travel, and postage shall be covered by this contract.

Schedule of Fees

Dr. Hossein Takallou, co-principal	$65/hour
Dr. Mojie Takallou, co-principal	$65/hour
Dr. Gary Hicks, co-principal	$75/hour
_____, technical	$35/hour

Schedule of Fees by Task

	Cost	Hours				
		Hicks	Takallou	Technical	Total	
Task I	10520	43	72, 23	32	170	
II	5660	12	56	32	100	
III*	11640	16	152	16	184	
c1	4615		64	13	77	or
c2	7300		101	21	122	(included
IV	1900	4	16	16	36	in T III)
V	2240	16	16		32	
Clerical		$700				

*Task IIIb assumes 8 hours plus a maximum of 69 hours per project, or 8 hours plus 114 hours for two projects.

GRANT/CONTRACT SUMMARY

METRO METROPOLITAN SERVICE DISTRICT

GRANT/CONTRACT NO. 901-158 BUDGET CODE NO. 530 313100 524190 75650

FUND: Operating DEPARTMENT: SW (IF MORE THAN ONE)

SOURCE CODE (IF REVENUE)

INSTRUCTIONS

1. OBTAIN GRANT/CONTRACT NUMBER FROM CONTRACTS MANAGER. CONTRACT NUMBER SHOULD APPEAR ON THE SUMMARY FORM AND ALL COPIES OF THE CONTRACT.
2. COMPLETE SUMMARY FORM.
3. IF CONTRACT IS —
   A. SOLE SOURCE, ATTACH MEMO DETAILING JUSTIFICATION.
   B. UNDER $2,500, ATTACH MEMO DETAILING NEED FOR CONTRACT AND CONTRACTOR'S CAPABILITIES, BIDS, ETC.
   C. OVER $2,500, ATTACH QUOTES, EVAL. FORM, NOTIFICATION OF REJECTION, ETC.
   D. OVER $50,000, ATTACH AGENDA MANAGEMENT SUMMARY FROM COUNCIL PACKET, BIDS, RFP, ETC.
4. PROVIDE PACKET TO CONTRACTS MANAGER FOR PROCESSING

1. PURPOSE OF GRANT/CONTRACT Feasibility Study: Using waste tire rubber for paving projects

2. TYPE OF EXPENSE ☐ PERSONAL SERVICES ☐ LABOR AND MATERIALS ☐ PROCUREMENT
   ☐ PASS THROUGH AGREEMENT ☐ INTER-GOVERNMENTAL AGREEMENT ☐ CONSTRUCTION
   ☐ OTHER

   OR

   TYPE OF REVENUE ☐ GRANT ☐ CONTRACT ☐ OTHER

3. TYPE OF ACTION ☐ CHANGE IN COST ☐ CHANGE IN WORK SCOPE
   ☐ CHANGE IN TIMING ☐ NEW CONTRACT

4. PARTIES TAK Assoc. Engineering Consultants

5. EFFECTIVE DATE TERMINATION DATE
   (THIS IS A CHANGE FROM)

6. EXTENT OF TOTAL COMMITTMENT:

ORIGINAL/NEW	$ 33,060
PREV. AMEND	
THIS AMEND	
TOTAL	$ 33,060

7. BUDGET INFORMATION

   A. AMOUNT OF GRANT/CONTRACT TO BE SPENT IN FISCAL YEAR 198 9 - 90 $ 16,530

   B. BUDGET LINE ITEM NAME Contrct Services AMOUNT APPROPRIATED FOR CONTRACT $ Ø

   C. ESTIMATED TOTAL LINE ITEM APPROPRIATION REMAINING AS OF January 19 89 $ 35,000

8. SUMMARY OF BIDS OR QUOTES (PLEASE INDICATE IF A MINORITY BUSINESS ENTERPRISE)

SUBMITTED BY	$ AMOUNT	
		☐ MBE
		☐ MBE
		☐ MBE

9. NUMBER AND LOCATION OF ORIGINALS

10. A. APPROVED BY STATE/FEDERAL AGENCIES? ☐ YES ☐ NO ☐ NOT APPLICABLE
B. IS THIS A DOT/UMTA/FHWA ASSISTED CONTRACT ☐ YES ☐ NO

11. IS CONTRACT OR SUBCONTRACT WITH A MINORITY BUSINESS? ☐ YES ☐ NO
IF YES, WHICH JURISDICTION HAS AWARDED CERTIFICATION _____

12. WILL INSURANCE CERTIFICATE BE REQUIRED? ☐ YES ☒ NO

13. WERE BID AND PERFORMANCE BONDS SUBMITTED? ☐ YES ☒ NOT APPLICABLE

TYPE OF BOND _____ AMOUNT $ _____

TYPE OF BOND _____ AMOUNT $ _____

14. LIST OF KNOWN SUBCONTRACTORS (IF APPLICABLE)

NAME _____ SERVICE _____ ☐ MBE

NAME _____ SERVICE _____ ☐ MBE

NAME _____ SERVICE _____ ☐ MBE

NAME _____ SERVICE _____ ☐ MBE

15. IF THE CONTRACT IS OVER $10,000
A. IS THE CONTRACTOR DOMICILED IN OR REGISTERED TO DO BUSINESS IN THE STATE OF OREGON?
☐ YES ☐ NO

B. IF NO, HAS AN APPLICATION FOR FINAL PAYMENT RELEASE BEEN FORWARDED TO THE CONTRACTOR?
☐ YES DATE _____ INITIAL _____

16. COMMENTS:

1) Sole source: TAK Associates are the only consultants doing this type of study.
2) Funds to cover this expense are realized from savings in contractural services lines item in alternative technology.
3) Approximately half of this contract will be paid by IGA with DEQ.
4) Half of contract will be paid in fiscal year '89-90 and half in FY '90-91.

GRANT/CONTRACT APPROVAL

INTERNAL REVIEW

DEPARTMENT HEAD

FISCAL REVIEW 2/9/90

BUDGET REVIEW 2/9/90

CONTRACT REVIEW BOARD
(IF REQUIRED) DATE _____

1. _____ COUNCILOR

2. _____ COUNCILOR

3. _____ COUNCILOR

COUNCIL REVIEW
(IF REQUIRED)

_____ DATE

LEGAL COUNSEL REVIEW AS NEEDED:

A. DEVIATION TO CONTRACT FORM _____

B. CONTRACTS OVER $10,000 _____

C. CONTRACTS BETWEEN GOVERNMENT AGENCIES _____