STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PROGRAM
COMPETITIVE GRANT PROGRAM

GRANT APPLICATION FORM

Mail to: Division of Governmental Coordination
Attn: CIAP Coordinator
P.O. Box 110030
Juneau, AK 99811-0030

Or hand-deliver to: Court Plaza Building, Suite 500
240 Main Street, Juneau
or Atwood Building, Suite 1660
550 W. 7th Street, Anchorage

Be sure to complete all twelve (12) pages. Incomplete or faxed applications will be considered ineligible for further consideration. **Deadline: February 8, 2002 – 5:00 p.m.**

If you transfer this application to a computer, your application must follow this format and include all requested information.

PROJECT TITLE: Anchorage Coastal Resource Atlas Project

GRANT CATEGORY (CHECK ONE):

CATEGORY 1 __X___ Conservation, restoration, enhancement or protection of Alaska coastal and marine areas, including wetlands and watersheds.

CATEGORY 2 _____ Education, particularly of young people, to develop an understanding and appreciation for Alaska coastal environments and watersheds.

NAME OF APPLICANT/ORGANIZATION: Municipality of Anchorage, Information Technology Department

Name of Grantee (if different than the applicant): _____

Any person or organization may apply for and receive a grant for a qualifying project under Category 1, Category 2, or both. Two or more people or organizations may participate in a project with one designated as the contract lead. If the grantee will be an individual or organization other than the applicant, the grantee must be identified.

APPLICANT ADDRESS:
Charles Barnwell
Information Technology Department, Data Resources
632 W. 6th Avenue
Anchorage, Alaska 99519-6650

CONTACT NAME, TITLE: Charles Barnwell, Data Resources Mgr.
Phone number: (907) 343-6813
Fax number: (907) 343-6810
e-mail address: BarnwellCE@ci.anchorage.ak.us

The person listed as the contact person should be the one most knowledgeable about the project and able to provide any needed information.

Applicants must submit an original signed application and five (5) copies, including any attachments.
In order to notify you that the application has been received by DGC, please include a self-addressed, stamped postcard or envelope, which will be date-stamped and mailed to the address indicated.

GENERAL PROJECT INFORMATION

PROJECT LOCATION: **Municipality of Anchorage, Anchorage Bowl Subarea**

ANTICIPATED START DATE: **June 2002**

ANTICIPATED COMPLETION DATE: **June 2003**

Grant projects must be scheduled to be completed within a two-year period from the date of the grant award. Extensions may be requested in advance and will be considered in the event of circumstances beyond the control of the applicant. Without an approved grant extension, grants may not be used for on-going efforts beyond the grant award period. Any required on-going effort will be the responsibility of the grantee. Applicants may define projects that consist of multiple phases provided that CIAP grant funding for any one phase shall result in a complete, stand-alone and usable product.

AMOUNT OF GRANT REQUEST: **$100,000**

Category 1 grants will generally be limited to $10,000 to 100,000.
Category 2 grants will generally be limited to $5,000 to $50,000.

TOTAL PROJECT COSTS: **$100,000**

If the project costs exceed the grant request, explain and document how the additional funds will be secured. Written documentation must be provided in the form of signed budget sheets, awards letters, etc.

CIAP AUTHORIZED USES. Briefly describe how the proposed project is consistent with at least one of the authorized uses under the Coastal Impact Assistance Program (see Procedures and Criteria Section VIII D):

Results of this GIS project and the modeling exercise will allow the Anchorage Coastal District to evaluate the efficiency and success of its CZM policies and to form the basis of a plan update according to State statutes and guidelines. The new data sets will provide a much-needed new baseline for monitoring, restoration and enhancement of coastal resources, consistency review methods for permits in coastal resources, and for watershed management plans also being developed. Given that the original Anchorage coastal resource atlas, and plan policies, are 20 yrs old, it is essential that the Anchorage District update these data and the policies vital to their protection. This project also coincides with the implementation of Anchorage's new Comprehensive Plan, which calls for extensive protection of coastal resources, and includes a land use code revision. This two-part Anchorage project primarily addresses the following legislatively authorized CIAP uses, from Section VIII. D:

D. (5) assessment, research, mapping and monitoring of coastal or marine resources and habitats, including, where appropriate, the establishment and monitoring of marine protected areas;
D. (9) assistance to local communities to assess, plan for and manage the impacts of growth and development on coastal and marine habitats and natural resources, including coastal community fishery assistance programs that encourage participation in sustainable fisheries.

This coastal atlas revision has secondary relationships to the following additional authorized CIAP uses:

D. (3) protection, restoration, and enhancement of coastal water quality consistent with the provisions of the

Coastal Zone Man. Act, including the reduction or monitoring of coastal polluted runoff or other contaminants **D (11)** projects and activities for the conservation, protection or restoration of wetlands.

Date Received by DGC	I certify to the best of my knowledge that the information in this application is true and correct and that I am legally authorized to sign and submit this application on behalf of the applicant. _____ _____ Signature of Authorized Representative Date _____ Printed Name _____ Title

PROPOSAL

(attach up to five additional pages as necessary)

I. PROJECT DESCRIPTION. Describe the scope of the project and what will be accomplished upon project completion.

BACKGROUND

Anchorage's original coastal resource atlas and analyses, and Coastal Management Plan, are all over 20 years old. As expressed in the 1980 Anchorage Coastal Resource Atlas, "inventories and mapping programs help answer questions about the uniqueness or scarcity of coastal resources." Many significant changes have occurred in Anchorage within the past twenty years. The Municipality's extensive and continuing growth pressures have stressed and changed the District's coastal resources, as evidenced in background data analyses in Anchorage's recently revised Comprehensive Plan. Definitions and locations of sensitive and critical resources have changed since the 1980's. In order to meet the community's need for housing, infrastructure and amenities, at a time when competition for remaining land and resources is intense, the District must update its Coastal Management Plan. This revision, as a major implementation strategy for the new Comprehensive Plan, begins with a new coastal resource mapping and analysis. Anchorage's CIAP project is a two-part exercise, which will generate two distinct products. These products are necessary as a basis for subsequent planned updates to the Anchorage Coastal Management Plan. If the projects are successful and appropriate, the methods will serve as a template for the remaining two subareas of the Municipality, and for other coastal district applications.

PROJECT DESCRIPTION

Part 1 of this project includes data gathering, mapping, ground-truthing, as necessary, and production of the following completely updated resources for the Anchorage Bowl (see Figure 1). These data will be placed in Geographic Information Systems (GIS) format and a set of hard-copy maps will also be produced. The GIS format will allow the District to manipulate these data with other GIS coverages, e.g. utilities, land use records, government services, roads, parks, etc. GIS (combined with other forms of data) has become Anchorage's most important technology for land use planning, modeling, and monitoring of coastal resources. Most of the original coastal atlas maps have never been updated or converted to GIS format. Part 1 will produce the following new, or completely updated resource maps:

1) **Current Land use:** Anchorage has a unique pattern of growth that can be attributed to its geographic

location and physical characteristics, past history, and institutional infrastructure. According to the 1980 Coastal Atlas, "land use patterns are the result of Anchorage's founding history, ownership patterns, physical characteristics, and type and location of this area's transportation system."

2) **Roads:** Like land use layer, Anchorage's road system has undergone significant changes in response to urban growth. It is a vital layer, which dictates land use patterns. It is critical for planners and managers to know what roads exist and how they interact with other resources.

3) **Slope:** We currently have digital imagery in the form of Digital Elevation Models (DEM) files, which are representations of cartographic information in a raster form. This layer, in combination with other coverages, is vital for watershed and slope analysis, and site planning.

4) **Streams/Waterbodies/Tidal boundaries:** The Municipality has never had a complete and ground-truthed coverage of stream and waterbody locations and boundaries, many of which have been altered or naturally changed since the original atlas. The MOA Watershed Management Section has worked in the past several years with GIS to improve this coverage, but we need to integrate this into an updated atlas.This coverage is vital to our NPDES monitoring requirements and to the new watershed planning efforts. Anchorage's true tidal boundary has never been mapped.

5) **Soils:** The newest USDA soils survey and individual site soil data from the past 20 yrs of development will be combined into a new coverage. USDA has recently completed a GIS coverage for Anchorage area.

6) **Floodplains/Wetlands:** This coverage will be updated to current conditions, since it is at least 6yrs old. Mapping current floodplains and wetlands location is crucial for monitoring wetland habitat and to lessen or prevent future flooding.

7) **Fish and Wildlife Habitats:** Expansion and development beyond the urban interface has consequences on wildlife and habitats. New wildlife data layers have been created that will be assimilated and depicted: black bear sightings; beaver colonies; fish habitats; birds of prey habitats; critical waterfowl habitats; shorebird habitats; songbird habitats; and critical habitat areas and community preference for natural open space. This data had never been mapped or analyzed in Anchorage. The new Comprehensive Plan calls for protection of wildlife habitats.

8) **Seismic maps:** This coverage will probably include only minor updates with the inclusion of site studies from individual development projects. However, the current coverage is an improvement over prior Atlas maps.

9) **Land Cover:** The Municipality possesses various remote-sensing materials (e.g., aerial photos; satellite imagery including remote sensing data) that enables us to classify land (vegetation) cover. This GIS theme is critical in light of fish and wildlife habitat protection and the spruce bark beetle infestation as it relates to the urban interface wildfire threat. The Municipality has a strong commitment to wildfire and public safety planning. The original land cover maps were never ground-truthed or adequately categorized.

Methodology/Products

This new Anchorage Coastal Resource Atlas will consist of layered digital maps and related images and information. These layers will be produced with various GIS software, primarily ESRI products such as ArcGIS and ArcView. When necessary, other software programs such as ERDAS Imagine (Image Processing software) will be employed. Each coverage is a theme, and will focus on certain qualities or attributes. Information to compile these layers will most likely be gathered from other sources and agencies (e.g., the USGS will coordinate with us and provide data to create seismic maps).

Metadata (data about data) will also be produced for the themes listed above. Anchorage is standardizing on

Federal Geographic Data Committee (FGDC) metadata. The metadata will document the technical aspects of the coverages, features, and related images, such as when the coverage was created, the meaning of attributes and item definitions, layer projection, etc. Upon completing our inventory, we will transfer the completed atlas coverages and accompanying metadata onto a CD-ROM, which can be more widely distributed at a reasonable cost to the public.

Part 2 of this project will be a modeling exercise. As discussed above MOA uses Imagine and ArcInfo software both of which contain advanced computer modeling tools. Planning and GIS staff will use resource modeling software, produced by ESRI and ERDAS, to analyze the coastal resources, relative to each other and additional land use data, to produce a sensitivity index or critical habitat identification. The original Anchorage Coastal Management Plan included Preservation, Conservation and Utilization Environments, which were based on the sensitivity and importance of the various coastal resources. This modeling portion of the project will use the software to manipulate the new data according to sensitivity decisions made by Planning and agency staff. The software allows for interactive and iterative changing of these variables should there be a need to do so. We will also coordinate with similar modeling projects taking place now with the wildfire assessment projects at the MOA. Basically the locations where various high value habitats and other sensitive resources overlap will become critical sites within Anchorage's coastal boundary. Essentially this modeling will be the initial revision for classifying Anchorage's coastal resources in the same manor as was done in the original district plan, i.e. the breakdown of resources into the Preservation, Conservation and Utilization categories. This modeling system, if successful and repeatable, will then serve as a template for other coastal district use in coastal plan updates.

II. ENVIRONMENTAL IMPACTS. Briefly describe any environmental impacts from the proposed project. A project that creates environmental or health problems is not eligible for a grant award.

There are no environmental impacts anticipated from this project. The majority of the work will involve the use of computers and GIS software.

III. EVALUATION CRITERIA. All complete applications submitted under either Category 1 or Category 2 will be evaluated using the following criteria and assigned values based on a point system within the ranges indicated. A maximum of 100 points may be assigned to any one project. Provide a brief narrative for each of the following criterion.

A. Demonstrated Need and Potential Benefit (0-15 points)

1. Describe what creates the need for the proposed project; how the proposed project provides lasting benefits for the community, region or state; whether the product may be used by other similarly-situated communities or agencies elsewhere in Alaska:

As mentioned in the project description background, Anchorage is a fast-growing community where competition for remaining lands for development, public infrastructure and open space needs is intensifying. Having a source book that graphically illustrates the natural resource base (that can serve as a comparison to conditions from 20 years ago) is a tremendous tool for city planners, the public and other agencies. Decisions about coastal resources, and about planning policies to use and protect these must be made with contemporary data. This project updates 20-yr old coastal resource data and allows computer and mutli-agency modeling to produce a new classification system, which will serve as the basis for a revision of Anchorage's Coastal Plan. Because the new mapping scheme is GIS-based, the ability to update these data is automatically simpler than ever before and provides district planners with "living" reference data. The modeling can also take advantage of the same data, and can be designed to be updated and "tweaked" over time to reflect different assessments and more data as it is collected. The Anchorage District also anticipates that the GIS database of coastal resources will facilitate the monitoring of cumulative impacts to those resources over time. This activity has proven difficult to accomplish to date for most Alaska districts. If the software modeling effort is successful, it will provide the State CZM program with a uniform template program for evaluating coastal resources across the State. It is the Anchorage District's intent to include State agency staff in the modeling effort so that the model can be manipulated to accomplish that.

2. Describe how the project avoids duplication of existing projects or programs and whether the project fills a need that otherwise would go unfulfilled:

While this project ultimately duplicates the 1980 atlas, it will produce either completely new or completely updated coastal resource data. Currently, there is no comprehensive inventory of resources within the Anchorage Bowl and without this grant there are no plans or funds to carry out such an effort. The modeling portion of the project has never been attempted and provides a unique new approach to analyzing and classifying Anchorage's coastal resources. Anchorage's new Comprehensive Plan calls for a revision of the District's Coastal Management Plan and other related planning actions relative to coastal resources and all of that effort has to be based on the results of this proposal.

B. Grant Administration (0-15 Points)

1. Provide evidence that you can maintain an accounting system that accurately reflects fiscal transactions associated with the grant project (attach documentation as necessary):

The Municipal Management Information Services Department includes budget and grants accounting staff who regularly manage projects of this nature. The Municipal Grants Accounts staff also currently manages all transactions and billings for Anchorage's longstanding annual CZM State grant funds. A project and accounting system similar to the current CZM project management will manage this new grant.

2. Describe your ability to implement both fiscal and project management so monies are expended only for the project and in a manner that results in the completion of the scope of work on time:

As noted above, the Municipality's Grants Account staff manages these types of special projects that come with funding outside the Municipal budgets. When the Assembly appropriates these CIAP funds, they create a unique budget unit for the sole administration of the new grant. Municipal staff will produce quarterly progress reports and attach these to the Anchorage District's required quarterly reports. The unique budget units and grants accounting set up by the Grants Account staff has a proven record of managing CZM funds in an appropriate and discrete system that guarantees project and fund separation from regular Municipal projects and

standard accounts.

2. If available, attach information that shows previous experience in project management and grant administration, including any recent audit or financial statements. Identify key individuals involved in the project and describe the experience, qualifications and the technical ability of the staff to complete the project:

The best reference and example for showing the Municipality's ability and experience with project management and grant administration is Anchorage's ongoing annual CZM grant. Thede Tobish, Anchorage Coastal District Coordinator, along with budget staff in the Grants Accounting Division, have been managing the budget, special projects, and required services administration of these annual grants since the early 1980's. Copies of financial statements are attached for reference and quarterly progress reports are on file at DGC-Juneau. Charlie Barnwell, GIS Data Resources Division Manager, has been project manager and grant administrator for many federally-funded special projects undertaken in the Management Information Services Department.

C. Project Readiness (0-15 Points): Projects that can most readily be started and completed will be given the highest rating under this criteria. For example, describe the status of your project and how soon it can be initiated, the status of any permit or environmental reviews that are required for the project, or whether necessary additional funds are immediately available. If lands are to be acquired, describe whether there are willing sellers and whether other possible sources of funding have been thoroughly explored.

A digital-based project such as this requires minimal fieldwork, and minimal start-up processing, meaning that work could be initiated as soon as funding is acquired. The only delay at the outset is the required Assembly appropriation process which takes about 3 weeks—work would begin at that milestone. No permits or environmental reviews are necessary, nor will there be any land acquisition. Essentially all of the data gathering, digitizing, ground-truthing and production is planned to be undertaken by current Municipal staff with existing equipment and materials. A sole-source contract is planned with the ESRI and ERDAS modeling expert who created the data modeling software and methods for the MOA and Firewise Wildfire modeling projects.

D. Project Results (0-15 Points)

1. Demonstrate that a complete product that meets the identified needs and fulfills the identified benefits will result from the project within the time allowed for completion:

GIS staff will be available on a full time basis for data and mapping production. Planning staff will available as needed and necessary agency coordination will be sought after as appropriate. Because of potential project competition and equipment needs for other future projects, GIS and Planning staff require that this proposed coastal resource atlas project be completed within one year. Several other planning projects, including the Chester Creek Watershed Plan and the Anchorage Bowl Parks Plan revision, both intended to commence in spring/summer 2002 depend on these coastal resources data and the software modeling and therefore are driving the completion of this project in a very timely manor.

2. Describe what community outreach you plan to do to share the results of the project:

At this time it is our intent to update the progress of the project and share preliminary results and maps on the Municipal website, at three separate links (the Main page, the wetlands site and the watershed management site). These sites are available to the public. Because the project is essentially a background and baseline mapping program, the main outreach activity will be with State and federal resource agencies along with appropriate Non-Governmental Organizations.

3. If this is an ongoing project, describe your plans for continuing financial and administrative support including operational costs, monitoring, equipment replacement, etc.:

The coastal resources and cityscape are constantly evolving and once the data are in GIS formats, staff will be able to revise and update any time. Updates and revisions to most of these data will be driven by other related projects and planning efforts that the Municipality may undertake in the future. At this time, implementation activities related to the new Anchorage Comprehensive Plan will likely require use of and updates of the data and those specific planning efforts will include funds as needed to accomplish this. The Anchorage District will seek additional funds for doing the same project for the two other subareas of the Municipality, Eagle River-Chugiak and Turnagain Arm. The Municipality continually updates computer equipment and software supplies, so that the majority of the work and cost would be devoted to modifying the map layers. Funding and support for this sort of work would come from annual operating funds.

E. <u>Category Specific Project Product (0-15 Points)</u>: Describe the final product your project will produce and how it will provide for lasting conservation, restoration, enhancement or protection of Alaska coastal, marine and watershed areas or how it will provide for education, particularly of young people, to develop an understanding and appreciation for Alaska coastal environments and watersheds. Projects that produce tangible, lasting products will be given the highest rating under this criteria.

The final product will consist of a CD-ROM, which can be easily copied and distributed. On the CD-ROM will be GIS data in open formats for easy use, and PDF files for viewing without GIS software. Existing data will be housed in the Municipality's central data files. The new coverages will be copied into formats necessary to be available on the appropriate Municipal websites (Watershed Mgmt., Wetlands, Planning, GIS), for public access. A set of hard-copy maps, similar to the popular original oversized Anchorage Coastal Atlas will also be produced as a reference document

The data itself and the results of the Part 2 modeling exercise will provide baseline information for use in upcoming planning efforts (Parks Plan revision, Chester Creek Watershed Plan, NPDES Permit compliance), and in day-to-day actions related to permit reviews for consistency with Anchorage's CZM plan. It is the Anchorage District's intent to construct the modeling program in a manor that will serve as a template for similar analysis of coastal resources for districts around Alaska, per *AS 46.40.*

F. <u>Agency and Public Involvement (0-10 Points)</u>: Demonstrate community, agency, or public support for the project. For example, attach a local governing board resolution, letters of support, minutes from public meetings, local partnership agreements, evidence of funding or in-kind support, etc.

Given the broad range of themes we will cover, this project is a cooperative effort that draws off of different resources for information. The previous atlas required the support and input of many agencies, public and private. We anticipate needing the assistance of various departments within the Municipality (e.g., Planning; Public Works, Parks) in addition to outside public agencies (e.g., USDA, BLM, etc). There have also been numerous private agencies that have already contributed to this database and will continue to do so.

BLM: Linda Ricketts, 271-4546; John Paine
USDA—Soil and Water Conservation District (Bill Sobers 271-2424, Ted Cox, Palmer)
ADNR Forestry: John See 269-8466
USFS: Kelly Kane
State of AK, DGC: Maureen McCrea, Chas Dense
State of AK, ADNR Land Records GIS: Rich McMahon 269-8836
USGS/EROS/AGDC: Mark Shasby 786-7022
USGS: Joy Geiselman (Science Center Director) 786-3668; Peter Haeusller 786-7447
Native: Eklutna Tribe (Mark Lamoreaux)
NPS George Dickison, 257-2547
USFWS Jerry Minick, 786-3315

G. <u>Cost Effectiveness (0-10 Points):</u> Describe the cost effectiveness of your project. Projects providing the greatest benefit at the lowest cost will be rated the highest on this criteria.

1) Very little travel required
2) Mimimum printing costs
3) Easily reproducable datasets
4) Existing equipment necessary for creation of coverages
5) Planning and agency staff consultations require no funding

H. <u>Benefit to a Listed Waterbody (0-5 Points):</u> Projects that take action to benefit waters listed as polluted under the Clean Water Act, Section 303(d) (attachment 1) may receive points under this criterion. An action may include assessment actions such as data collection that can be used to track the source of pollution; development or implementation of a Watershed Restoration Strategy; monitoring the effectiveness of corrective actions; or on-the-ground restoration work. Describe how an action to improve or restore a polluted water will either mitigate the effects of the pollution or repair the damage after a polluting activity has ceased.

Resource data updates include information for several Anchorage streams listed on the impaired waterbody list. The results of the modeling and the use of this data in project consistency reviews for activities in these watersheds will assist in better management of and decisions for these creeks.

<u>PROPOSED LINE ITEM BUDGET</u>

CATEGORIES	Grant Amount**
Personnel/Benefits	$65,000
Travel	
Equipment	$5,000

Supplies	
Contractual	$30,000 – ESRI
Construction	
Other	
Total	$100,000

**** Please do not include any funds except the CIAP grant funds. If a project will receive funding from other sources, this amount should not be included in the above table.**

BUDGET INFORMATION:

TRAVEL (describe who will travel and for what purpose):

Travel will most likely be contained within the Anchorage city limits.

CONTRACTUAL (identify tasks and products to be completed by a contractor and the cost for each):

Modeling – The Part 2 modeling effort will be contracted out to ESRI, to the individual that created this habitat modeling product. It is estimated that travel and unit costs for this section of the project are $30,000.

EQUIPMENT AND SUPPLIES (describe):

Computer equipment hardware updates as required for the task, along with GIS software/program updates and necessary file or data converters, and plotter hardware and software updates or additions. Total estimated for these items is $5000.

WORK PLAN

Project Activities: List the major activities and products associated with your project. Activities are the actual things you will do to achieve a final product. Also list the approximate time for completion of each activity or product. Include the start date and completion date if known. The workplan should contain enough detail to convince readers that sufficient planning has been done to design a realistic project that can achieve the intended results in the time available.

MAJOR ACTIVITIES/PRODUCTS	APPROXIMATE COMPLETION DATES
DATA GATHERING/DIGITIZING and RELATED FIELD WORK:	July 2002 thru October 2004
[Land Use, Habitat, Roads, Slope, Waterbodies, Wetlands/Floodplains, Fish and Wildlife Habitats, Seismic, Land Cover]	July 2002 thru October 2002
CARTOGRAPHIC DESIGN	November 2002—March 2004

STAKEHOLDER CONSULTATION	August 2002
DATABASE DESIGN & MODELING	August 2002
PROTOTYPE DESIGN/MOCK-UP	November 2003; March 2004
DATA TO WEBSITES	December 2005
FINAL MAPPING DESIGN & PRODUCT	September 2005
DATA MODELING W/ESRI	July 2005